

## 3.0 EXISTING ENVIRONMENT AND ANALYSIS OF IMPACT

### 3.1 PHYSICAL RESOURCES

#### 3.1.1 Air Quality

This section describes the air quality impacts associated with the new roadways planned to improve access to and egress from the existing UTC property and the proposed new development of the former Rentschler Field. The potential air quality impacts of the project will be due to the changes in motor vehicle traffic operations and travel patterns in the project area. The Baseline Condition for this project includes relatively minor development at the Rentschler Field site (Phase 1) and minor roadway improvements in the area. The Baseline Condition year is 2008. The design year for the long-term roadway improvements is 2020. The No-Build Alternative in 2020 represents the Baseline Condition roadways with the full Rentschler Field development in place. The Build Alternative in 2020 represents the long-term roadway improvements constructed with the full Rentschler Field development in place. The air quality analysis is included in Appendix C.

The Clean Air Act (CAA) of 1970, as amended, is the basis for most federal air pollution control programs. The purpose of the CAA is to preserve air quality and to protect the public's health and welfare. Under the authority of the CAA, the U.S. Environmental Protection Agency (EPA) regulates air quality nationally. The EPA delegates authority to the DEP for monitoring and enforcing air quality regulations in the state of Connecticut. The Connecticut State Implementation Plan (SIP), developed in accordance with the CAA, contains the major state requirements with respect to transportation and air quality.

Air pollution is of concern because of its demonstrated effects on human health. Public awareness of the effects of air pollution has increased noticeably in recent years. This is evidenced by the passage of the CAA in 1970 and subsequent major Amendments in 1977 and 1990. Of special concern are the respiratory effects of the pollutants, as well as their general toxic effects. The air pollutants of concern in this assessment are listed here, along with a description of their potential health effects.

**Ozone** (O<sub>3</sub>) is a strong oxidizer and a pulmonary irritant that affects the respiratory mucous membranes, other lung tissues, and respiratory functions. Exposure to ozone can impair the ability to perform physical exercise, can result in symptoms such as tightness in the chest, coughing, and wheezing, and can ultimately result in asthma, bronchitis, and emphysema. Motor vehicles do not emit ozone directly. Emissions of volatile organic compounds (VOC) and nitrogen oxides (NOx), which are the precursor pollutants to ozone formation, react in the presence of sunlight to form ozone in the atmosphere. These reactions occur over periods of hours to days during atmospheric mixing and transport downwind. Accordingly, ozone and its precursors VOC and NOx are regulated at the regional level, and a discussion of their potential impacts is included below.

**Carbon monoxide** (CO) is a colorless and odorless gas, which is a product of incomplete combustion. CO is absorbed by the lungs and reacts with hemoglobin to reduce the oxygen carrying capacity of the blood. At low concentrations, CO has been shown to aggravate the symptoms of cardiovascular disease. It can cause headaches and nausea, and at sustained high concentration levels, can lead to coma and death. CO concentrations are not related to ozone levels. CO concentrations tend to be highest in localized areas because they are most affected

by local traffic congestion, since motor vehicles are a major source of CO emissions. Therefore, the key pollutant of concern for this project is CO.

**Particulate matter** (PM10 and PM2.5) is made up of small solid particles and liquid droplets. PM10 refers to particulate matter with an aerodynamic diameter of 10 micrometers and smaller, and PM2.5 refers to particulate matter with an aerodynamic diameter of 2.5 micrometers and smaller. Particulates enter the body by way of the respiratory system. Particulates over 10 micrometers in size are captured in the nose and throat and are readily expelled from the body. Particles smaller than 10 micrometers, and especially particles smaller than 2.5 micrometers, can reach the air ducts (bronchi) and the air sacs (alveoli). Particulates, especially PM2.5, have been associated with increased incidence of respiratory diseases such as asthma, bronchitis, and emphysema; cardiopulmonary disease; and cancer. The majority of PM emissions from mobile sources are attributed to diesel vehicles. Since the project is not expected to cause a significant increase in diesel vehicles in the area, PM emissions are not assessed in this EIE.

**Sulfur dioxide** (SO<sub>2</sub>) is a gas that is formed during the combustion of fuels containing sulfur compounds. It can cause irritation and inflammation of tissues with which it comes into contact. Inhalation can cause irritation of the mucous membranes causing bronchial damage, and it can exacerbate pre-existing respiratory diseases such as asthma, bronchitis, and emphysema. Exposure to SO<sub>2</sub> can cause damage to vegetation, corrosion damage to many materials, and soiling of clothing and buildings. Due to the implementation of EPA's Ultra-Low Sulfur Diesel Fuel Requirements taking effect in 2006, SO<sub>2</sub> is not expected to be a concern, and it is not assessed further in this EIE.

**Lead** (Pb) is no longer considered to be a pollutant of concern for transportation projects because the major source of lead emissions to the atmosphere had been from motor vehicles burning gasoline with lead-containing additives. However, emissions from this source have been nearly eliminated as unleaded gasoline has replaced leaded gasoline nationwide. Therefore, lead emissions are not assessed in this EIE.

**Mobile Source Air Toxics** (MSATs) are a subset of the 188 air toxics defined by the CAA. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries). The MSATs are compounds emitted from highway vehicles and non-road mobile equipment. The EPA currently includes 21 air toxics in its full list of MSATs, and identifies six of those as primary MSATs. The six primary MSATs are benzene, formaldehyde, acetaldehyde, diesel particulate matter/diesel exhaust gases, acrolein, and 1,3-butadiene. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. There currently are no established ambient air quality standards for MSATs.

The EPA is the lead Federal Agency for administering the CAA and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule (66 FR 17229) on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources on March 29, 2001. This rule was issued under the authority in Section 202 of the CAA. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline program, its national low emission vehicle standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. By

2020, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, acetaldehyde, and diesel PM and exhaust gas emissions, even for those projects that have a vehicle miles traveled (VMT) increase.

As a result, EPA concluded that no further motor vehicle emission standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under authority of CAA Section 202(l) that will address these issues and could make adjustments to the full 21 and the primary six MSATs.

In accordance with the Federal Highway Administration's (FHWA's) guidance on air toxics (US DOT, FHWA, 2006), a qualitative assessment of MSATs was also included in the air quality analysis.

Sources of air pollutants in the project area include stationary sources in addition to mobile sources. Under the Clean Air Act Amendments (CAAA) of 1990, each state was required to develop a Title V operating permit program to permit major sources of air pollution and other sources subject to Federal CAA requirements. The Title V permit is a facility-wide permit that is required for facilities that include stationary sources which emit or have the potential to emit:

- 10 tons per year (TPY) or more of any one hazardous air pollutant (HAP) listed in Section 112(b) of the CAA, except hydrogen sulfide; or
- 100 TPY or more of any regulated air pollutant;
- 50 TPY or more of any VOCs or NO<sub>x</sub> in an ozone "serious non-attainment" area or 25 TPY or more of VOCs or NO<sub>x</sub> in an ozone "severe non-attainment" area; or
- 25 TPY or more of any combination of HAPs, except hydrogen sulfide.

The Title V permit program also applies to owners or operators of any of the following:

- Any facility which includes an emissions unit subject to: New Source Performance Standards (NSPS) (40 CFR Part 60), National Emission Standards for Hazardous Air Pollutants (NESHAPS) (40 CFR Parts 61 and 63), chemical accident prevention provisions (40 CFR Part 68), or federal acid rain program requirements (40 CFR Parts 72 - 78, inclusive); and
- Any facility which includes a municipal waste combustion unit with the capacity to burn greater than 35 Mg per day of residential, commercial and/or institutional discards (i.e., a facility which is subject to Section 129(e) of the CAA).

### **3.1.1.1      Existing Conditions**

#### ***Transportation Improvements***

Transportation conformity is a procedure to ensure that transportation activities do not degrade air quality or interfere with meeting the National Ambient Air Quality Standards (NAAQS), which is the main purpose of the SIP.

The Rentschler Field Access Road project is in Hartford County, which is in the Greater Connecticut Moderate 8-hour Ozone Nonattainment area. This moderate ozone non-attainment area must demonstrate attainment with the 8-hour ozone standard by June 15, 2010. The NAAQS for 8-hour ozone is 0.08 parts per million (ppm). This area is currently classified as an

attainment area for CO and particulate matter (PM10 and PM2.5), as well as for the other criteria pollutants.

In order for a transportation project to be approved by the FHWA, it must be in conformity with the SIP. Conformity of a project is determined by meeting the following criteria: the project must come from a conforming transportation plan or transportation improvement program (TIP); its design concept and scope in place at the time of the conformity determination must be maintained throughout implementation; and, its design concept and scope must be sufficiently defined to determine emissions at the time of the conformity determination. If a project does not meet these criteria, its emissions cannot cause the TIP to exceed the allowable emissions budget in the SIP.

The Rentschler Field Access Road project study area is located within the area that is under the jurisdiction of the Capitol Region Council of Governments (CRCOG). The currently approved TIP for Connecticut is the *2005 Statewide Transportation Improvement Program (STIP)*. The Draft 2007 STIP is under review. Connecticut's current long-range plan is the *2004 Long-Range Transportation Plan*.

Although the Rentschler Field Access Road project has not yet been included in the STIP, CRCOG has approved 'general' recommendations for the project and will soon be asked to approve an amendment to the STIP in order to include the project (Thomas Maziarz, CRCOG; Pers. Comm.; August 24, 2006). Since the project has not been included in the currently approved Transportation Plan or the STIP, to demonstrate conformity of the project to the SIP, emissions in the Build Alternative must be shown to be less than the emissions in the No-Build Alternative. Although traffic data were unavailable to estimate detailed emissions inventories, there are data available to infer that the Build Alternative emissions will be less than the No-Build Alternative emissions. The traffic study performed for the project included a Synchro model traffic analysis of the intersections in the project study area. This traffic study showed a network-wide decrease in motor vehicle fuel use for the Build Alternative compared to the No-Build Alternative during the peak traffic hours. It is assumed that annual average motor vehicle fuel use in the area will follow the same trend and, subsequently, result in a decrease in motor vehicle emissions in the area. Since emissions are expected to decrease in the Build Alternative, the project is not expected to delay attainment of the 8-hour ozone NAAQS, and therefore, when the project is added to the conforming STIP, the project will be in conformity with the Connecticut SIP.

### ***Site Development***

Pratt & Whitney (P&W), Division of UTC, is the only Title V operating permit holder within East Hartford, as of April 10, 2005. There are two Pratt & Whitney facilities in East Hartford with separate permits. The Andrew Willgoos Turbine Laboratory on Pent Road holds a permit issued on January 13, 2003, which expires July 24, 2007, and the central facility at 400 Main Street holds a permit issued on December 11, 2002, which expires December 11, 2007. A summary of actual emissions from these two facilities for calendar year 2004 is shown below (Andrew Pollak, DEP; Pers. Comm.; May, 2005).

**Table 3.1.1-1. Pratt & Whitney Actual Emissions, Calendar Year 2004 (Tons Per Year).**

| Pollutant       | Main Street Facility | Andrew Willgoos Turbine Laboratory |
|-----------------|----------------------|------------------------------------|
| CO              | 58.4                 | 2.5                                |
| Hydrocarbons    | 8.5                  | 0.6                                |
| NO <sub>x</sub> | 183.9                | 13.2                               |
| PM              | 10.0                 | 0.4                                |
| SO <sub>x</sub> | 58.7                 | 1.3                                |
| Pb              | 0.002                | 0.0004                             |

Source: DEP

### **3.1.1.2 Transportation Impacts**

#### ***CO Hot Spot Analysis***

The 1990 CAAA require that the proposed project not cause or contribute to any new violations of the NAAQS, not increase the frequency or severity of any existing violations, and not delay attainment of any NAAQS. Because CO emissions are associated with motor vehicles and transportation projects, CO is a pollutant of concern in the project-level analysis.

Maximum CO concentrations are most likely to occur in the vicinity of intersections where vehicles are forced to slow down, stop, idle, and then accelerate. Based on this concept, and prior to beginning the detailed hotspot or microscale analysis, a screening strategy was employed to evaluate existing and proposed intersections in the project study area with respect to level-of-service, existing and projected traffic volumes, receptor locations, and roadway configurations.

Based on the EPA's criteria (US EPA, November 1992a) for ranking and selecting intersections for detailed analysis, three intersections were selected. These intersections are listed in Table 3.1.1-2. The intersections selected should be considered the worst-case in terms of CO concentrations with the assumption that predicted CO concentrations at all remaining locations throughout the project study area would be lower than those predicted for these intersections.

A fourth intersection was also included in the analysis, although it does not meet EPA criteria for detailed modeling. The intersection of Silver Lane at Roberts Street was included in the analysis because of the major improvements that are planned for the intersection and potential public concern.

**Table 3.1.1-2. Intersections Evaluated in the Air Quality Analysis.**

| Intersection Number | Intersection Description               | Selection Basis |
|---------------------|--|-----------------|
| 1.                  | Main Street at Willow Street           | EPA Criteria    |
| 2.                  | Silver Lane at Mercer Avenue/HOV Ramps | EPA Criteria    |
| 3.                  | Willow Street at Airport Road          | EPA Criteria    |
| 4.                  | Silver Lane at Roberts Street          | Public Concern  |

The dispersion modeling analysis was performed based on EPA's guidelines (US DOT, FHWA, 2006) and guidance from the DOT (Tom Doyle, DOT; Pers. Comm.; August 11, 2006). Maximum one- and eight-hour CO concentrations were estimated at various sensitive receptor sites in the vicinity of the analyzed intersections. The receptor sites included locations that were identified as potentially experiencing the most substantial impacts due to the proposed project. Receptors were located outside the roadway-mixing zone on both sides of each approach to each

intersection. These areas included locations where the general public has reasonable access. The modeling analysis was performed for the 2008 Baseline Condition and the 2020 No-Build and Build Alternatives.

The emission factors that were used to compute the emission rates were generated from the most recent version of the EPA's approved emissions factor program MOBILE6.2 (US EPA, October 2002; November 12, 2002) and guidance from DOT (Tom Doyle, DOT; Pers. Comm.; July 28, 2006) (DEP). Input data was prepared to reflect Connecticut-specific conditions such as the vehicle age distribution, emissions maintenance programs and temperatures representative of Connecticut's winter season, since CO emission rates are higher in the winter season. CO idle emission factors at street intersections were developed from the MOBILE6.2 program using EPA's recommended procedure for idle factors (US EPA, July 30, 1993).

The analyses were performed using peak hour traffic volumes, turning movements, vehicle speeds, signal-cycle times, and intersection geometries obtained from the traffic studies completed for this project. The traffic, geometries, and emission data were then used in EPA's CAL3QHC Version 2.0 (US EPA, November 1992b) model under a worst-case scenario to estimate maximum one-hour CO concentrations. The worst-case scenario assumed a Pasquill-Gifford Stability Class of D (or neutral), a wind speed of 1 m/sec, a variable wind direction (determined by analyzing all directions from 0 to 360 degrees in 10-degree increments), a mixing height of 1,000 m, and a surface roughness value of 108 cm, corresponding to single-family residential land use.

The eight-hour CO concentrations were estimated from the one-hour results by the use of a persistence factor of 0.7 per ConnDOT guidance (Thomas Maziarz, CRCOG; Pers. Comm.; August 24, 2006). The background one-hour CO concentration used in the analysis was 4.3 ppm, and the eight-hour background CO concentration was 3.0 ppm (Thomas Maziarz, CRCOG; Pers. Comm.; August 24, 2006). These background concentrations were assumed not to vary from alternative to alternative or with the analysis years. The total CO concentrations were then compared with the Federal and State Ambient Air Quality Standards for CO.

The maximum predicted one-hour CO concentrations at each intersection analyzed in this study are presented in Table 3.1.1-3 for the 2008 Baseline Condition, and the 2020 No-Build and Build Alternatives. The maximum predicted eight-hour CO concentrations at each intersection for each of the analysis alternatives are presented in Table 3.1.1-4. The values reported here are the highest concentrations from among all of the receptors analyzed at each intersection.

**Baseline Condition:** There were no exceedances of the one-hour CO standard predicted at any of the intersections for the 2008 Baseline Condition. As shown in Table 3.1.1-3, the highest estimated one-hour CO concentration (including a background concentration of 4.3 ppm) was 6.6 ppm at the intersection of Silver Lane and Roberts Street. This concentration is well below the Federal and State one-hour CO standard of 35 ppm. There were also no exceedances of the eight-hour CO standard predicted at any of the intersections for the 2008 Baseline Condition. As can be seen in Table 3.1.1-4, the highest eight-hour CO concentration (including a background concentration of 3.0 ppm) was 4.6 ppm at the intersection of Silver Lane and Roberts Street, and this concentration is below the eight-hour CO standard of 9 ppm.

**Table 3.1.1-3. Maximum Estimated 1-Hour CO Concentrations (parts per million)**

| #  | Intersection Description               | 2008<br>Baseline | 2020<br>No-Build | 2020<br>Build |
|----|--|------------------|------------------|---------------|
| 1. | Main Street at Willow Street           | 6.1              | 6.9              | 6.0           |
| 2. | Silver Lane at Mercer Avenue/HOV Ramps | 5.4              | 5.6              | 5.5           |
| 3. | Willow Street at Airport Road          | NA               | 6.8              | 5.6           |
| 4. | Silver Lane at Roberts Street          | 6.6              | 7.1              | 5.8           |

NA means Not Available.

**Table 3.1.1-4. Maximum Estimated 8-Hour CO Concentrations (parts per million)**

| #  | Intersection Description               | 2008<br>Baseline | 2020<br>No-Build | 2020<br>Build |
|----|--|------------------|------------------|---------------|
| 1. | Main Street at Willow Street           | 4.3              | 4.8              | 4.2           |
| 2. | Silver Lane at Mercer Avenue/HOV Ramps | 3.8              | 3.9              | 3.8           |
| 3. | Willow Street at Airport Road          | NA               | 4.8              | 3.9           |
| 4. | Silver Lane at Roberts Street          | 4.6              | 5.0              | 4.1           |

NA means Not Available.

**No-Build Alternative:** The 2020 No-Build Alternative includes the estimated traffic volumes and intersection design geometries expected to be in existence without the proposed long-term roadway improvements in place, but with the full Rentschler Field development in place. Under the No-Build Alternative, the highest estimated one-hour CO concentration (see Table 3.1.1-3) was 7.1 ppm, at the intersection of Silver Lane and Roberts Street. This level is well below the Federal and State one-hour CO standard of 35 ppm. The values reported here include a background concentration of 4.3 ppm and are the highest concentrations from among all of the receptors analyzed at each intersection.

The highest predicted eight-hour CO concentration (see Table 3.1.1-4) for the 2020 No-Build Alternative was 5.0 ppm, at the intersection of Silver Lane and Roberts Street. This level includes a background concentration of 3.0 ppm and is below the eight-hour Federal and State CO standard of 9 ppm.

**Build Alternative:** The 2020 Build Alternative includes the estimated traffic volumes and intersection design geometries expected to be in place with the proposed roadway improvements. Under the 2020 Build Alternative, the highest estimated one-hour CO concentration (see Table 3.1.1-3) was 6.0 ppm at the intersection of Willow Street and Main Street. This level is well below the Federal and State one-hour CO standard of 35 ppm. The values reported here include a background concentration of 4.3 ppm and are the highest concentrations from among all of the receptors analyzed at each intersection.

The highest predicted eight-hour CO concentration (see Table 3.1.1-4) for the 2020 Build Alternative was 4.2 ppm at the intersection of Willow Street and Main Street. This level includes a background concentration of 3.0 ppm and is below the eight-hour Federal and State CO standard of 9 ppm.

When the maximum predicted one- and eight-hour CO concentrations in the Baseline Condition are compared to the corresponding concentrations in the future No-Build Alternative, the concentrations

increase at each of the intersections in the No-Build Alternative. Although motor vehicle emission factors decrease in the future based on newer motor vehicle emission control technologies, the increase in traffic volumes in the study area more than offsets the benefits of the lower emission factors so that a net increase in concentrations is estimated.

When the maximum predicted one- and eight-hour CO concentrations for the Build Alternative are compared to the corresponding concentrations for the No-Build Alternative, the predicted concentrations are lower for all intersections in the Build Alternative. Although traffic volumes in the area essentially remain constant between the No-Build and Build Alternatives, the decreased congestion and delay at the intersections due to the project's long-term roadway improvements result in the decreased concentrations at the intersections. All the predicted levels are well below the NAAQS.

### ***Mobile Source Air Toxics***

For the Rentschler Field Access Road project, the change in the amount of MSATs emitted between the No-Build and Build Alternatives will be proportional to the change in the amount of VOC emissions and diesel exhaust emissions. The decrease in emissions between the No-Build and Build Alternatives will be due to the increased efficiency of the traffic flow, the decreased congestion and delay, and therefore, the decrease in the amount of fuel used in the study area due to the project being built. Therefore, MSAT emissions are expected to decrease in the Build Alternative in relative proportion to the estimated decrease in VOC and diesel exhaust emissions.

### ***Construction Impacts***

Construction-related activities can result in short-term impacts on ambient air quality. These potential impacts include fugitive dust emissions, direct emissions from construction equipment and truck exhausts, and increased emissions from motor vehicles on local streets due to traffic disruption. These types of impacts could occur during various stages of highway construction.

Fugitive dust emissions can result from movement of construction equipment and transport of materials to and from a construction site. Dust emissions can also occur during site preparation activities such as grading, curb laying, or grubbing and removal of vegetation to prepare a site for construction. Fugitive dust would generally be a problem during periods of intense construction activity and would be accentuated by windy and/or dry conditions. Good housekeeping practices, such as wetting or chemically treating exposed earth areas, covering dust-producing materials during transport, and limiting construction activities during high wind conditions, should minimize the dust impacts. Trucks are also a source of fugitive dust emissions. Routing trucks away from residential and other sensitive receptor locations will alleviate these potential adverse impacts and should be implemented to the maximum extent possible. By covering vehicles that transport excavated material on the affected roadways, fugitive dust emissions will be further reduced.

Compared with emissions from other motor vehicle sources in the project study area, emissions from construction equipment and trucks are generally quite insignificant with respect to compliance with the ambient air quality standards. When this equipment is properly operated and maintained, no adverse impacts on ambient air quality standards are expected.

Construction activities can also result in traffic disruption and rerouting. Traffic disruption, such as decreased roadway capacity or detouring, can lead to increased traffic congestion, attendant increases in motor vehicle exhaust emissions on the nearby roadways, and can result in elevated CO concentrations. Proper traffic management during the construction period will mitigate any potential adverse effects. This will include finding less congested routes for construction-related

truck traffic, creating temporary detours for regular roadways where capacities have been diminished, providing traffic control, routing trucks away from residential neighborhoods, and restricting construction activities during hours of high traffic volumes on the existing roadways. It is also recommended that DOT establish staging areas and worker parking away from sensitive receptors.

### **3.1.1.3      Site Development Impacts**

The site development of Rentschler Field encompasses a wide variety of land uses, buildings and facilities that may be subject to DEP air quality permitting. As detailed information on these uses is not yet available, the quantification of air emissions and their potential impact on local and regional air quality is not possible. However, each individual development project, depending on the nature and size of development, may be required to obtain stationary source air quality permits from DEP.

The New Source Review permit program, administered by the Engineering and Technical Services Division of the DEP Bureau of Air Management, regulates emissions released to the air from new and modified stationary sources. Examples of such sources include, but are not limited to: paint spray booths; metal degreasers; metal plating and surface treatment operations; printing operations; boilers, generators, and other fuel burning equipment; incinerators; stationary internal combustion engines such as diesels and turbines; chemical reactors and mixers; volatile liquid storage; rock crushing operations; and many other manufacturing or processing operations. DEP uses individual permits, general permits and regulations to regulate activities under the CGS Sections 22a-170 and 22a-174.

Individual permits are required for any new or modified source which is not otherwise exempt under Regulations of Connecticut State Agencies (RCSA) Section 22a-174-3a(a)(2) and is a:

- New major stationary source,
- Major modification,
- New or reconstructed major source of HAPs subject to the provisions of subsection (m) of RCSA Section 22a-174-3a,
- New emission unit with potential emissions of fifteen (15) tons or more per year of any individual air pollutant,
- Modification to an existing emission unit which increases potential emissions of any individual air pollutant from such unit by fifteen (15) tons or more per year, or
- Stationary source or modification that becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant.

On November 1, 2004, the DEP completed a rulemaking effort that adopted a new regulation, Section 22a-174-42 of the RCSA, and amended three regulations, RCSA Sections 22a-174-3b(e)(2), 22a-174-3a(a)(2)(B) and 22a-174-22(a)(4). The new regulation and amendments address the potential air quality impacts of smaller-scale electric generating units distributed throughout an electrical system, referred to as "distributed generators," and revise the existing requirements for emergency engines (i.e., emergency generators) consistent with the new distributed generator requirements. The new regulation and amendments became effective January 1, 2005. New RCSA Section 22a-174-42 (Section 42) establishes a standardized exemption from the duty to obtain an individual permit pursuant to RCSA Section 22a-174-3a (Section 3a) for the owners and operators of distributed generators that are able to operate in compliance with Section 42. By limiting a generator's actual emissions to less than 15 TPY, the

requirements of Section 42 ensure that the generator's impacts are not significant enough to merit the detailed individual permit review process of Section 3a. Section 42 includes output-based standards for emissions of NO<sub>x</sub>, particulate matter, CO and carbon dioxide as well as fuel sulfur content requirements to control emissions of sulfur dioxide. Revisions to RCSA Section 22a-174-3b (Section 3b) reduce the operating hours and fuel sulfur content requirements for emergency engines. The permitting options currently available to the owners and operators of distributed generators and emergency engines and associated operating requirements are highlighted as follows:

1. Owners and operators of distributed generators with potential emissions equal to or greater than 15 TPY have two compliance options:
  - Operation under Section 42, or
  - Applying for and obtaining an individual permit under Section 3a.
2. Owners and operators of emergency engines with potential emissions equal to or greater than 15 TPY have three compliance options:
  - Operation under Section 3b,
  - Operation under Section 3c, or
  - Applying for and obtaining an individual permit under Section 3a.
3. The owners and operators of distributed generators operating under Section 42 and emergency engines operating under Section 3b must use fuel with a sulfur content that does not exceed that of federal motor vehicle diesel fuel. The current federal limits of 0.05% by weight (500 ppm) will generally be limited to 0.0015% by weight (15 ppm) in retail markets as of September 1, 2006.
4. The owner or operator of a distributed generator operating under Section 42 is limited to the hours of operation determined by a formula in RCSA Section 22a-174-42(b). The owner or operator of an emergency engine operating under Section 3b will be limited to 300 hours in any twelve consecutive months.
5. The owner or operator of a distributed generator operating under Section 42 must comply with the emissions testing and emission limit requirements of Section 22, if the generator's potential emissions exceed the daily ozone season threshold. If the requirements of Section 42 limit actual emissions to less than the daily ozone season threshold in Section 22, then the owner or operator is only subject to the compliance plan, record keeping and reporting requirements of Section 22.

Under Sections 22a-170 and 22a-174 of the CGS, all major sources of air pollution, and certain other sources, may be required to obtain a Title V operating permit in accordance with the CAAA of 1990. A Title V operating permit:

- Is a facility-wide permit,
- Brings together all applicable state and federal air pollution control requirements in a single permit,
- Provides a means of implementing federal maximum achievable control technologies (MACT) standards and acid rain requirements, and
- Requires record keeping and monitoring.

DEP uses both individual and general permits to regulate activities. Individual permits are issued directly to an applicant, whereas general permits are permits issued to authorize similar minor activities by one or more applicants. The owner or operator of a source otherwise subject to the Title V operating permit program may seek coverage under the General Permit to Limit Potential to Emit from Major Stationary Sources of Air Pollution (GPLPE), instead of obtaining a Title V

operating permit, if such Title V source chooses to "cap" (or limit) their emissions to levels below the applicable major source thresholds, which are listed in the previous section.

Based upon the allowable uses with the DDD and the types of uses envisioned for the site development, the following sources are expected to generate air emissions from the development area:

- Boilers,
- Rooftop air handling units,
- Hot water heaters, and
- Emergency generators.

Based on current and projected market conditions, there is not expected to be a significant amount of manufacturing use within the development area, therefore associated pollutant emissions will be minimal.

Construction activities on site will result in exhaust emissions from construction equipment and fugitive dust. In general, the upper site soils are sandy and silty alluvial materials which dry out quickly when exposed (topsoil is removed). With the flat topography and wide, open space lacking vegetation or structures sufficient to act as wind breaks, high winds common in the area can easily mobilize the soils creating significant blowing dust. This condition was made evident during construction of the Rentschler Field Stadium, when dust created poor visibility on Silver Lane sufficient to stop traffic, and soiled nearby buildings. Without adequate dust control, this condition is likely to occur as a result of soil disturbance for development of the site, including the EHGEMS. The problem will be proportional to the area that is exposed at any given time. As the site becomes more developed, the addition of buildings will create wind breaks, reducing the potential for off-site migration of wind blown soils.

#### **3.1.1.4 Cumulative Impacts**

Since emissions are expected to decrease in the project area and the CO hotspot dispersion modeling analysis showed that the project is in compliance with the Connecticut and Federal ambient air quality standards, there will be no adverse air quality impacts associated with the implementation of the proposed project. When the project is included in the conforming STIP, the project will be in conformity with the SIP.

Construction activities associated with the transportation improvement projects and site development will result in exhaust emissions from construction equipment and fugitive dust. Fugitive dust may be significant during site development, given the soil characteristics at the site. Mitigation measures are discussed below.

#### **3.1.1.5 Mitigation**

Based on the air quality analysis presented above, no mitigation measures for operational activities are proposed at this time.

As noted previously, construction activities associated with the transportation infrastructure improvement projects could potentially lead to increased CO concentrations near local areas of congestion due to traffic disruption. Any potential adverse effects will be mitigated by proper traffic management as described above in the Transportation Impacts section. It is also recommended that DOT establish staging areas and worker parking away from sensitive receptors.

Exhaust emissions from construction equipment and fugitive dust are possible construction-associated impacts to air quality for both the transportation improvement projects and site development. Such potential impacts will be temporary and short-lived. The contractor(s) will be bound by construction specifications that require controlling or abating air pollution in accordance with DEP regulations. All construction equipment will be required to be in good working order and meet all applicable standards. However, if necessary, additional control devices may be required such as oxidation catalysts or particulate filters for diesel-operated equipment. Such measures, as well as natural gas powered equipment have been used in special circumstances, e.g., immediately adjacent to populated areas or in confined spaces where construction emissions were of extreme concern. At present, the environmental need does not appear to justify the use of special emission control equipment. When construction equipment is properly operated and maintained, no adverse impacts on ambient air quality standards are expected.

Other mitigation measures will include the control and abatement of dust, mist, smoke, vapor, gas, aerosol, other particulate matter, odorous substances or any combination thereof arising from construction operations, hauling, storage, or manufacture of materials. Dust impacts may be minimized by good housekeeping practices, by routing trucks away from residential and other sensitive receptor locations, and by covering vehicles that transport excavated material on the affected roadways, as described above in the Transportation Impacts section.

In order to minimize the occurrence of wind-blown dust, all temporary fill will be stabilized during use to prevent wind or water erosion. Such stabilization measures may include covering, shielding or seeding of fill piles. The areal extent of disturbed vegetated surfaces will be confined to that area necessary to perform the work. Seeding will be required of disturbed soils within 7 days of the Contractor's reaching an appropriate grading increment. If the grading operation will be suspended for a period of 30 or more consecutive days, any disturbed soils will be seeded or otherwise stabilized. The site will require the use of wind breaks (board fence, wind fence, sediment fence, snow fence, row of trees) which will control air currents and blowing soil.

Fugitive dust from other disturbed soil areas such as construction roadways will be controlled through the application of water and/or calcium chloride. Watering equipment will consist of pipelines, tanks, tanktrucks or other devices, which are capable of applying a uniform spread of water over the surface. All fill haul trucks will be required to have covered loads to minimize dust generation. Anti-tracking pads or vehicle washing stations will be used to minimize transport of soils to paved surfaces. All paved surfaces with accumulating soil, dirt and dust materials will be mechanically swept for the purpose of allaying dust conditions. The frequency of sweeping will be determined by site conditions and the project engineer.

### **3.1.2 Noise**

By definition, noise is unwanted sound. As noise levels increase, they can produce several detrimental effects on people ranging from nuisance and psychological stress to hearing loss. The unit of measure used is the “dBA” where dB denotes a quantity that is proportional to the logarithm of the sound pressure. Because the decibel is based on a logarithmic scale, a 10-decibel increase in noise level is generally perceived as a doubling of noise, while a 3-decibel increase in noise is just barely perceptible to the human ear. The A-weighting is an attempt to duplicate how the human ear responds to the audible frequencies of sound. Some examples of environmental noise and their levels, as expressed in the A-weighted scale, are shown in Figure 3.1.2-1. The noise metric used to assess traffic noise is the hourly Leq, or equivalent, noise level that represents a level of constant noise that has the same acoustic energy as the fluctuating traffic noise levels over that one-hour period.

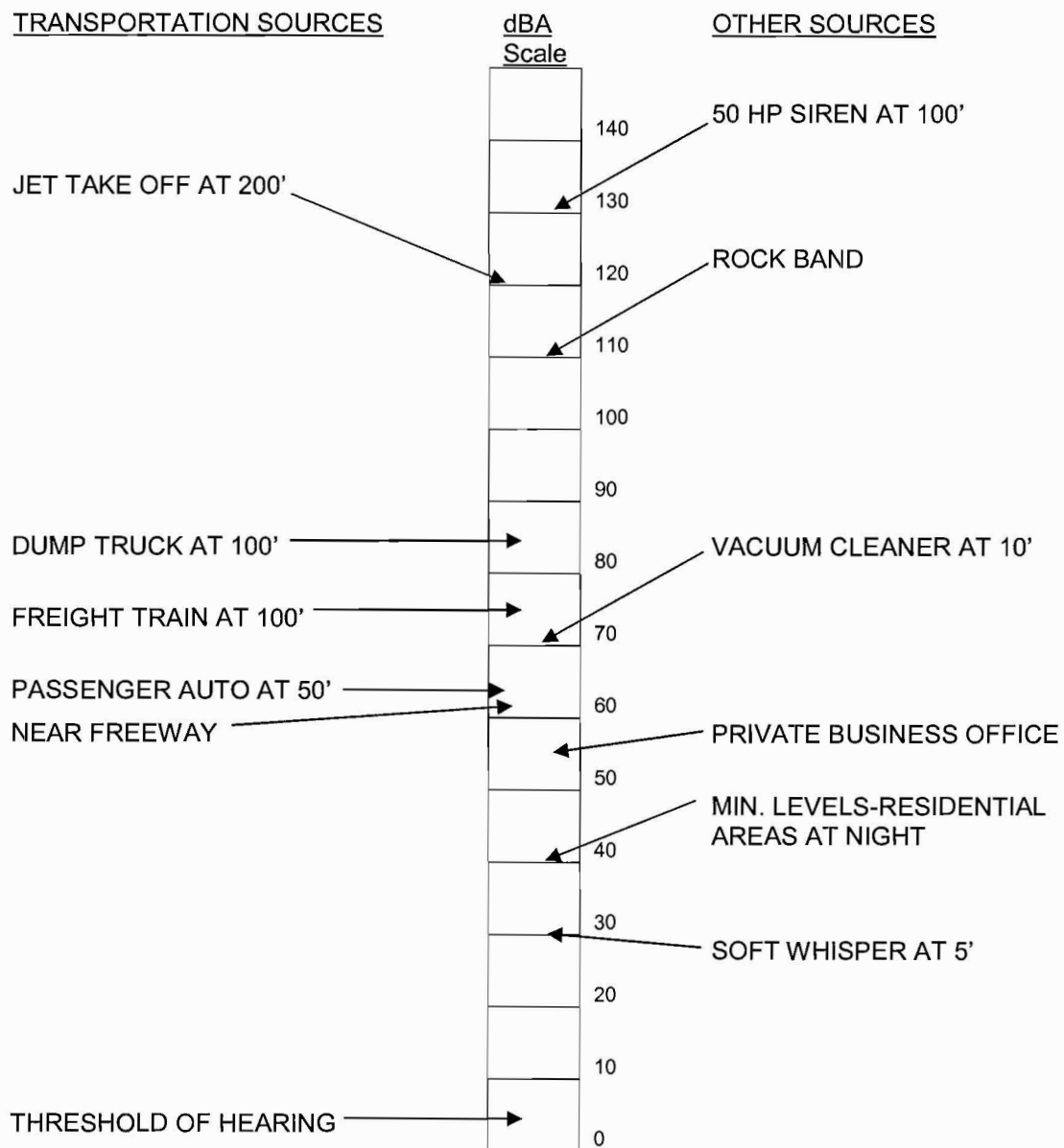
#### **3.1.2.1 Existing Conditions**

##### ***Transportation Improvements***

A traffic noise assessment was prepared for the Rentschler Field Development Project that includes both proposed short-term and long-term roadway improvements for a north access from Route I-84 along Roberts Street and Silver Lane, and a south access from Route 2 along Main Street and High Street (Appendix D). The short-term improvements consist of street widening and signal modifications, while the long-term improvements include the Roberts Street/Silver Lane grade-separation at the north entrance, and the new Main Street/High Street south entrance. The traffic noise assessment for the Rentschler Field Development Project will include the baseline 2008 condition with the short-term roadway improvements and the future project design year 2020 with full site development both with and without the long-term roadway improvements.

The traffic noise analysis was performed in accordance with the methodology contained in the FHWA's *Abatement of Highway Traffic Noise and Construction Noise* (23 CFR Part 772, dated 1982; revised 1997), and the DOT *Highway Traffic Noise Impact Analysis and Abatement Policies and Procedures*, (July, 1997). The FHWA and DOT documents set forth the basic concepts, methods, and procedures for documenting the extent and severity of traffic noise from roadway projects. For the noise modeling analysis, the FHWA's Traffic Noise Model (TNM) version 2.5 was used to calculate the traffic noise levels at sensitive receptor locations within the project area for the baseline 2008 condition, and the future project design year 2020 with full site development both with and without the long-term roadway improvements. In accordance with FHWA procedures, the traffic noise assessment consists of a noise measurement program to determine the existing noise levels within the project area, the calibration of the TNM noise model by comparing the measured and predicted traffic noise levels, and the traffic noise modeling assessment for the 2008 baseline condition and the future design year 2020 conditions.

At noise-sensitive receptor locations along the north access road and south access road of the Rentschler Field development site, predicted traffic noise levels were compared to the FHWA and DOT noise criteria to determine impact. The FHWA Noise Abatement Criteria (NAC), which is also included in the DOT *Traffic Noise Analysis and Abatement Policies and Procedures*, was used to assess impacts at noise-sensitive receptor locations during the noisiest PM peak-hour traffic conditions. As shown in Table 3.1.2-1, an impact condition occurs if the predicted traffic noise levels



**Figure 3.1.2-1. Typical A-Weighted Sound Levels of Representative Noise Sources (BEC, 2000)**

approach (within one decibel), equal, or exceed 67 dBA for a residential receptor (Category B), and 72 dBA for a commercial receptor (Category C). In addition, DOT also has a relative noise criterion in which an impact condition can also exist if the predicted future traffic noise levels from the project result in a substantial increase of fifteen decibels or more over the existing noise level.

A noise measurement program was conducted in the vicinity of the north and south access road alignments for the Rentschler Field Development Project. The purpose of these noise measurements was to determine the existing noise levels at sensitive receptors near these proposed access roads and to calibrate the TNM noise model. The noise monitoring was conducted during the PM peak hour period on August 8<sup>th</sup> and 9<sup>th</sup>, 2006 at a total of eight measurement locations, four in the vicinity of the Roberts Street/Silver Lane north access road alignment shown in Figure 3.1.2-2, and four in the vicinity of the Main Street/High Street south access road alignment shown in Figure 3.1.2-3. These Leq noise measurements were collected in conformance with FHWA and DOT noise monitoring guidelines.

**Table 3.1.2-1. FHWA Traffic Noise Abatement Criteria**

| Agency   | Land-Use Category <sup>1</sup> | Noise Level <sup>2</sup> | Description   |
|----------|--------------------------------|--------------------------|---|
| FHWA NAC | A                              | 57<br>Leq(h)             | Lands on which serenity and quiet are of extraordinary significance.  |
|          | B                              | 67<br>Leq(h)             | Residences, hotels, schools, churches, libraries, hospitals, parks and other recreational areas.            |
|          | C                              | 72<br>Leq(h)             | Developed lands, properties, or activities not included in Categories A and B above.                        |
|          | D                              | -- <sup>3</sup>          | Undeveloped lands.  |
|          | E <sup>4</sup>                 | 52<br>Leq(h)             | Indoor: Residences, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums. |

1 Land use categories are based on sensitivity to noise intrusions.

2 The criteria threshold noise limits are represented by the hourly equivalent noise level (or Leq(h)) for both the FHWA and Conn DOT at all noise-sensitive receptor locations.

3 -- indicates no criteria limit applies to this type of land use.

4 The criterion for interior locations is given for various receptor types.



Figure 3.1.2-2. Noise Measurement Locations – Roberts Street/Silver Lane North Entrance

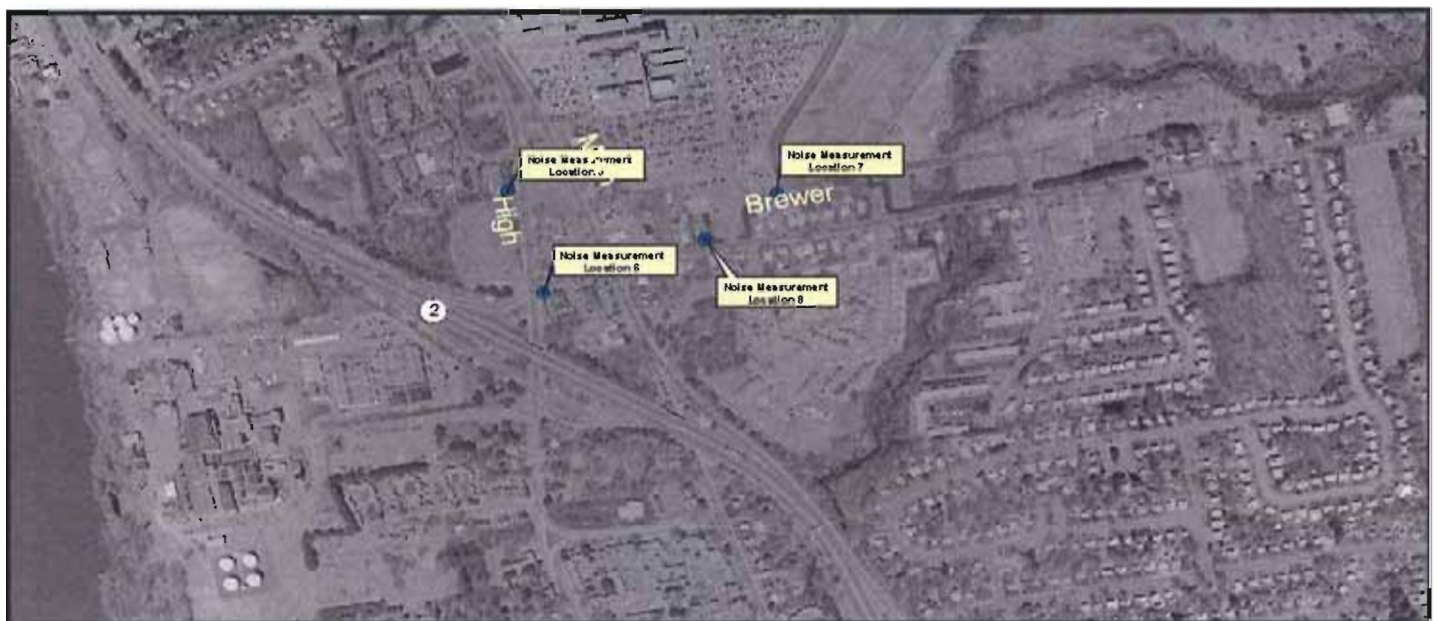


Figure 3.1.2-3. Noise Measurement Locations – Main Street/Brewer Street South Entrance

The four measurement locations for the Roberts Street/Silver Lane north entrance alignment are all residential receptors. Receptors R1, R2, and R3 are located along Silver Lane and are primarily exposed to traffic noise from Silver Lane. Receptor location R4 is on Clement Road and is exposed to traffic noise from I-84. The four measurement locations for the Main Street/High Street south entrance alignment include the Carriage Park Condominiums on High Street (R5), the office building at the corner of Brewer Street and High Street (R6), a residence on Brewer Street (R8), and at the rear of the Brewer Street residences (R7) exposed to traffic noise on Runway Road used by Pratt & Whitney employees using the Brewer Street entrance. These areas are exposed to traffic noise on Main Street, Brewer Street, High Street, and Route 2. During each of the noise measurement periods, concurrent traffic data was obtained disaggregated into automobiles, medium trucks (vehicles with two axles and six tires), heavy trucks (vehicles with three or more axles), buses, and motorcycles for use in calibrating the TNM noise model. A description of the measurement locations is presented in Table 3.1.2-2.

**Table 3.1.2-2. Measured Hourly Leq Noise Levels (Existing)**

| Receptor | Location                                  | Receptor Type | Measured Leq Noise Level (dBA) |
|----------|---|---------------|--------------------------------|
| R1       | 544 Silver Lane                           | Residential   | 64.0                           |
| R2       | 438 Silver Lane                           | Residential   | 63.3                           |
| R3       | 356 Silver Lane                           | Residential   | 65.0                           |
| R4       | 62 Clement Road                           | Residential   | 70.1                           |
| R5       | 45 High Street (Carriage Park Apartments) | Residential   | 59.7                           |
| R6       | 287 Brewer Street                         | Commercial    | 68.3                           |
| R7       | 32 Brewer Street                          | Residential   | 64.2                           |
| R8       | 22 Brewer Street                          | Residential   | 64.4                           |

**Noise Measurement Results:** The results of the noise measurements are shown in Table 3.1.2-2. For the north entrance alignment, the hourly Leq noise measurements obtained at receptor locations R1, R2, and R3 ranged from 63 to 65 dBA due to the traffic noise from Silver Lane. The measured Leq noise level at receptor location R4 on Clement Road was 70.1 dBA due to traffic noise from I-84. For the south entrance alignment, the measured hourly Leq noise level at receptor location R5 at the Carriage Park Condominiums on High Street was 59.7 dBA. The measured noise level at the office building at the corner of High Street and Brewer Street was 68.3 dBA due to the noise from the local street traffic and Route 2. At measurement location R7 at the rear of the residences along Brewer Street, the measured Leq noise level was 64.2 dBA due to the traffic noise on Runway Road from Pratt & Whitney employees using the Brewer Street entrance. At receptor location R8 on Brewer Street, the measured Leq noise level was 64.4 dBA due to local street traffic.

**Noise Modeling Analysis:** The FHWA's TNM noise model was used to calculate the traffic noise levels at the sensitive receptors near the north and south entrance roads to the proposed Rentschler Field development site. In addition, the TNM noise model was calibrated by comparing the measured traffic noise levels with the predicted noise levels using the same traffic volume counts obtained during the measurement period.

#### TNM Noise Model Calibration

The TNM noise model was calibrated using the traffic volume counts made during the noise measurements obtained at receptor locations R1, R2, R3, R5, R7, and R8. Measurement locations R4 and R6 were not included in the noise model calibration exercise. At measurement

location R4, the traffic counts on I-84 were not obtained because the view of the highway is obscured by a 10-foot high noise barrier. At measurement location R6, traffic counts on Route 2 were not obtained because this section of the highway is elevated and out of view from ground level. The results of the TNM noise model calibration are shown in Table 3.1.2-3. The calculated traffic noise levels are within 1-dBA of the measured noise levels indicating very good agreement. As a result, no adjustment factors are required in the TNM noise model for the traffic noise analysis.

**Table 3.1.2-3. Comparison of Measured and Predicted Leq Traffic Noise Levels**

| Receptor | Location         | Measured Leq Noise Level | TNM Predicted Leq Noise Level | Difference |
|----------|------------------|--------------------------|-------------------------------|------------|
| R1       | 544 Silver Lane  | 64.0                     | 63.3                          | -0.7       |
| R2       | 438 Silver Lane  | 63.3                     | 62.3                          | -1.0       |
| R3       | 356 Silver Lane  | 65.0                     | 65.1                          | +0.1       |
| R5       | 45 High Street   | 59.7                     | 59.1                          | -0.6       |
| R7       | 32 Brewer Street | 64.2                     | 63.5                          | -0.7       |
| R8       | 22 Brewer Street | 64.4                     | 64.3                          | -0.1       |

### ***Site Development***

The new Stadium in the northeast corner of the parcel produces localized and short-term noise increases during events. The most significant of these are during UCONN football games that occur primarily on Saturday afternoons and occasional concerts (approximately 10-12 total events per year). Onsite and offsite noise monitoring is conducted by a certified acoustics consultant for all concerts at Rentschler Field to ensure compliance with the East Hartford noise ordinance. No violations of the ordinance have been monitored to date. Noise impacts on residential areas from traffic traveling to and from the Stadium on event days has been minimized or avoided by rerouting traffic from these areas as part of a Transportation Control Plan.

The nearest sensitive noise receptors to Rentschler Field are the residences surrounding the area. These residences are located in neighborhoods north, south, and east of the property.

### **3.1.2.2 Transportation Impacts**

Using the calibrated TNM noise model and the traffic data provided by the project team, the results of the traffic noise analysis were obtained for the 2008 baseline year condition and the 2020 design year conditions. The 2020 design year traffic noise modeling analysis included the full development of the Rentschler Field site with both the short-term and long-term roadway improvements. The short-term improvements consist of street widening and signal modifications, while the long-term improvements include the Roberts Street/Silver Lane grade-separation at the north entrance, and the new Main Street/High Street south entrance. The results of the TNM noise modeling analysis are shown in Table 3.1.2-4 and described below.

#### ***Roberts Street/Silver Lane – North Entrance***

For the noise modeling analysis of the Roberts Street/Silver Lane north entrance, traffic noise levels were calculated at a total of 300 receptors within a project area that extends along Silver Lane between Mercer Avenue and Forbes Street. For the 2008 baseline condition, the predicted traffic noise levels at 61 residential receptor locations along Silver Lane approach (within one decibel), equal, or exceed the FHWA and DOT noise impact criterion of 67 dBA. These noise impacts are due to the level of traffic on Silver Lane and the proximity of the residences to the

roadway. Most of the homes on Silver Lane are less than 50 feet from the roadway. No commercial receptors exceed the FHWA noise impact criterion of 72 dBA.

For the 2020 design year with the short-term roadway improvements and full development of the Rentschler Field site, the number of impacted residential receptors increased from 61 to 67 due to the increase in traffic volume on Silver Lane. With the addition of the long-term roadway improvement associated with the Roberts Street/Silver Lane grade-separation, only one additional residential receptor was impacted on Silver Lane bringing the total to 68. The locations of these impacted receptors are shown in Figure 3.1.2-4. No commercial receptors exceed the FHWA noise impact criterion of 72 dBA. In addition, no receptor exceeds DOT's substantial increase criterion of fifteen decibels above the existing measured noise levels.

**Table 3.1.2-4. Comparison of the Number of Noise Impacted Receptors.**

|   | <b>Number of<br/>Receptors<br/>Modeled</b> | <b>2008<br/>Baseline</b> | <b>2020<br/>with Short-Term<br/>Roadway<br/>Improvements</b> | <b>2020<br/>with Long-Term<br/>Roadway<br/>Improvements</b> |
|---|--|--------------------------|--|---|
| Roberts Street/Silver Lane North Entrance | 300  | 61                       | 67   | 68  |
| Main Street/High Street South Entrance    | 427  | 13                       | 26   | 12  |

#### ***Main Street/High Street – South Entrance***

For the noise modeling analysis of the Main Street/High Street south entrance, traffic noise levels were calculated at a total of 427 receptors within a project area that includes Main Street, Brewer Street, and High Street near the proposed south entrance. For the 2008 baseline condition, without the south entrance, the predicted traffic noise levels at 13 residential receptor locations on Brewer Street and Main Street approach (within one decibel), equal, or exceed the FHWA and DOT noise impact criterion of 67 dBA. These noise impacts are due to the level of traffic on these local roadways and the proximity of the residences to the roadway. Most of the homes on Brewer Street are within 30 feet of the roadway. No commercial receptors exceed the FHWA noise impact criterion of 72 dBA.

For the 2020 design year with the short-term roadway improvements and full development of the Rentschler Field site, the number of impacted residential receptors along Brewer Street and Main Street increased from 13 to 26 due to the increase in traffic volume on these local roadways. With the addition of the long-term roadway improvement associated with the new Main Street/High Street south entrance, the number of impacted residential receptors along Brewer Street and Main Street decreased to 12. This is due to the decrease in traffic volume on Brewer Street resulting from the Pratt & Whitney employees using the new south entrance on Main Street rather than the employee entrance on Brewer Street that will be closed. The locations of these impacted receptors are shown in Figure 3.1.2-5. However, even with the increased traffic volume from the proposed Main Street/Brewer Street south entrance to the Rentschler Field site, the traffic noise levels (60 dBA) at the rear of the residences on Brewer Street are below the FHWA and DOT noise impact criterion of 67 dBA for residential receptors. No commercial receptors exceed the FHWA noise impact criterion of 72 dBA. In addition, no receptor exceeds DOT's substantial increase criterion of fifteen decibels above the existing measured noise levels.

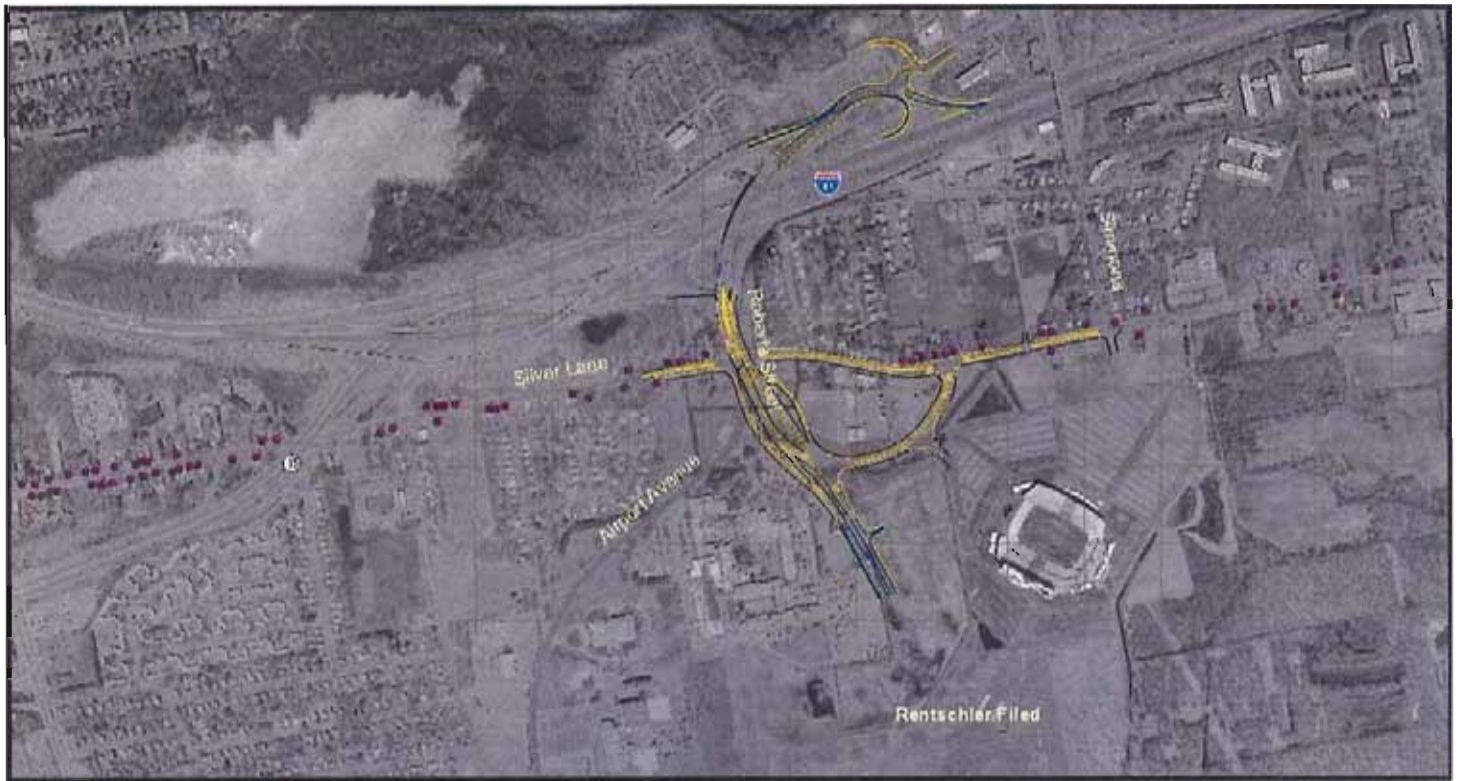


Figure 3.1.2-4. 2020 Noise Impacts – North Entrance with Long-Term Roadway Improvements



Figure 3.1.2-5. 2020 Noise Impacts – South Entrance with Long-Term Roadway Improvements

### ***Comparison of Predicted Traffic Noise Levels at the Measurement Locations***

As part of the noise modeling analysis, the traffic noise levels at each of the eight noise measurement locations are presented in Table 3.1.2-5 to indicate how the predicted noise levels vary for each of the project conditions. Because of the general increase in traffic volume between the baseline year 2008 and the future design year 2020, the traffic noise levels increase by 1 to 2 dBA at all of the eight measurement locations. Both of these conditions include only the short-term roadway improvements. With the addition of the long-term roadway improvements, the north entrance with the Roberts Street/Silver Lane grade-separation, results in little change in the traffic noise levels at receptor locations R1, R2 and R3 when compared to the 2020 condition with the short-term roadway improvements. The traffic noise level for receptor location R4 does not include the traffic noise from I-84. If the measured traffic noise levels from I-84 are added to these levels then the total traffic noise level at this receptor would remain essentially unchanged at 70.1 dBA for all project conditions because I-84 is the dominant traffic noise source and the logarithmic sum of the two traffic noise levels  $55.5 \text{ dBA} + 70.1 \text{ dBA} = 70.2 \text{ dBA}$ . As a result, this receptor is impacted by the traffic noise from I-84 and not the Roberts Street/Silver Lane grade-separation.

In addition to the measurement locations, Table 3.1.2-5 shows the expected change in noise levels at the two residential receptors (430 Silver Lane and 398 Silver Lane) that are located to the immediate east and west of the grade-separation. With the addition of the Roberts Street/Silver Lane grade-separation, the traffic noise level at 430 Silver Lane (east of the grade-separation) is expected to increase from 63.8 dBA to 65.3 dBA. However, these traffic noise levels are below the FHWA and DOT noise impact criterion of 67 dBA. The traffic noise level at 398 Silver Lane (west of the grade-separation) is expected to increase from 66.2 dBA to 67.2 dBA. The traffic noise levels at this receptor location approaches (within one decibel) or exceeds the FHWA and DOT noise impact criterion of 67 dBA.

With the addition of the Main Street/High Street south entrance to the Rentschler Field site, the traffic noise level at receptor location R8 on Brewer Street is expected to decrease by 2.3 dBA because of the reduction in traffic due to the Pratt & Whitney employee's use of the new Main Street entrance rather than the present Brewer Street employee entrance that will be closed. However, the noise levels at measurement location R7 at the rear of the Brewer Street residences will increase by approximately 4 dBA due to the increase in traffic associated with the new Main Street/High Street entrance to the Rentschler Field site. However, even with this increase in traffic noise, this level is still well below the FHWA and DOT noise impact criterion of 67 dBA for residential receptors.

In addition to the measurement locations, Table 3.1.2-5 shows the expected change in noise level at two receptors (the residence at 326 Main Street and Augie and Ray's Restaurant) located to the immediate north and south of the proposed Main Street/Brewer Street entrance. With the addition of this entrance, the traffic noise level at the residence located at 326 Main Street is expected to increase from 62.3 dBA to 70.4 dBA resulting in a noise impact condition at this receptor. Possible noise mitigation measures include a noise barrier along the north side of the entrance, shifting the entrance road approximately 20 feet further south, installing acoustical windows and insulation in the building, or a possible acquisition of the property. These mitigation measures will be evaluated in more detail during final design. The traffic noise levels at Augie and Ray's Restaurant (south of the entrance) is expected to increase from 57.1 dBA to 61.7 dBA. However, these noise levels are well below the FHWA and DOT noise impact criterion of 72 dBA for commercial receptors.

**Table 3.1.2-5. Comparison of Traffic Noise Levels (Leq in dBA) at the Measurement Locations and Other Selected Nearby Receptors.**

| Rec. | Location          | 2008<br>Baseline | 2020<br>with<br>Short-Term<br>Roadway<br>Improvements | 2020<br>with<br>Long-Term<br>Roadway<br>Improvements | 2020<br>Change<br>In<br>Noise Level |
|------|-------------------|------------------|---|--|-------------------------------------|
| R1   | 544 Silver Lane   | 66.1             | 67.4  | 67.7   | +0.3                                |
| R2   | 438 Silver Lane   | 64.2             | 65.8  | 65.9   | +0.1                                |
| R3   | 356 Silver Lane   | 66.8             | 68.2  | 68.3   | +0.1                                |
| R4*  | 62 Clement Road   | 53.4             | 55.5  | 55.1   | -0.4                                |
| R5   | 45 High Street    | 62.6             | 64.4  | 65.0   | +0.6                                |
| R6   | 287 Brewer Street | 64.1             | 65.4  | 65.7   | +0.3                                |
| R7   | 32 Brewer Street  | 55.1             | 56.2  | 60.0   | +3.8                                |
| R8   | 22 Brewer Street  | 67.0             | 67.7  | 65.4   | -2.3                                |
| Res. | 430 Silver Lane   | 62.2             | 63.8  | 65.3   | +1.5                                |
| Res. | 398 Silver Lane   | 64.6             | 66.2  | 67.2   | +1.0                                |
| Res. | 326 Main Street   | 60.3             | 62.3  | 70.4   | +8.1                                |
| Com. | Augie and Ray's   | 55.2             | 57.1  | 61.7   | +4.6                                |

\* These traffic noise calculations do not include the traffic from I-84

### ***Construction Noise***

Noise impacts from construction activities are closely related to the phase of construction and the type and placement of construction equipment at the site. Table 3.1.2-6 shows a variety of construction equipment that may be deployed at various stages of highway construction. Typical noise levels from this equipment are also shown.

Construction activities would result in temporary noise impacts to receptors at various locations adjacent to the proposed construction. Noise levels would vary depending on the type and number of pieces of equipment active at any one time. In general, construction noise would be restricted to daytime hours.

### **3.1.2.3 Site Development Impacts**

Mixed-use development within Rentschler Field may result in noise impacts to neighborhoods surrounding Rentschler Field. The type and severity of impacts will depend on the exact placement of potential noise generating uses, such as research and development, entertainment and recreational uses, in relation to existing noise receptors. As these placements are unknown at this time, specific noise impacts may not be evaluated.

Construction activities associated with site development may also result in noise impacts to neighborhoods surrounding Rentschler Field. A description of construction noise is included above.

**Table 3.1.2-6. Construction Equipment Reference Lmax Source Noise Levels.**

| <b>Equipment Type</b> | <b>Reference Lmax Noise Level<br/>(dBA @ 50 feet)</b> |
|-----------------------|---|
| Front End Loader      | 80  |
| Backhoe               | 80  |
| Bulldozer             | 85  |
| Tractor               | 84  |
| Scraper               | 85  |
| Grader                | 85  |
| Truck                 | 84  |
| Paver                 | 85  |
| Vibrator              | 76  |
| Concrete Mixer        | 83  |
| Crane                 | 85  |
| Derrick               | 85  |
| Generator             | 82  |
| Compressor            | 80  |
| Impact Pile Driver    | 95  |
| Pavement Breaker      | 90  |
| Pneumatic Tool        | 85  |

Source: "FHWA Roadway Construction Noise Model – User's Guide", U.S. Department of Transportation, Federal Highway Administration, Report No. FHWA-HEP-05-054, January 2006.

#### **3.1.2.4 Cumulative Impacts**

The results of the traffic noise assessment indicate that the number of impacted receptors along Silver Lane and Brewer Street will increase over the 2008 baseline condition in the design year 2020 with full development of the Rentschler Field site due to the increased traffic volume within the project area. For the design year 2020 with the addition of the long-term roadway improvements that consist of the Roberts Street/Silver Lane grade-separation at the north entrance, and the new Main Street/Brewer Street south entrance, the number of impacted receptors along Silver Lane will remain relatively unchanged, while the number of impacts along Brewer Street will decrease as shown in Table 3.1.2-4. However, since these impacted receptors require direct access to these roadways, noise barriers are not a reasonable and feasible mitigation measure and are therefore, not recommended for this project.

The only receptor impacted above the FHWA and DOT noise criteria is a residence on Main Street (#326) immediately north of a nail salon and Augie and Ray's restaurant. Possible noise mitigation measures include a noise barrier along the north side of the entrance, shifting the entrance road approximately 20 feet further south, installing acoustical windows and insulation in the building, or a possible acquisition of the property. These mitigation measures will be evaluated in more detail during final design.

Construction noise will occur as a result of construction of both the transportation improvements and site development.

#### **3.1.2.5 Mitigation**

Noise mitigation measures were considered for receptor locations, where noise impacts have been identified. The primary mitigation measure considered for noise abatement for this project

was a noise barrier. Noise barriers provide noise abatement by reducing the transmission of sound waves. This is accomplished by shielding receptor locations from the noise source by blocking the line of sight. Noise barriers are judged as effective when they achieve a 5 to 10 dBA or greater noise reduction for the receptor locations with noise impacts.

Noise abatement is not always possible or practical at all impacted receptor locations. In order for noise abatement measures to be considered, the following FHWA and DOT criteria must be met:

- The receptor locations must have predicted sound levels resulting in adverse noise impacts;
- The noise abatement measure must be able to provide a reasonable reduction (at least 7 dBA) in sound levels for first row receptors;
- The noise abatement measure must be cost effective; and
- The noise abatement measure must be feasible to construct.

For most of the noise-impacted receptors along Silver Lane and Main Street and Brewer Street, the design of suitable noise barriers is not reasonable and feasible. Many residences and businesses have driveways that intersect these roads and an effective noise barrier would restrict access and impair visibility and safety. As a result, noise barriers along Silver Lane and Main Street and Brewer Street are not feasible and therefore not recommended for this project. Although a noise barrier for the residential receptor at 326 Main Street adjacent to the south entrance could be effective in reducing the traffic noise levels to the first floor residents of this structure to below the impact criterion, shifting the entrance approximately 20 feet further south could have the same effect. This alternative will be evaluated during final design.

Potential noise impacts to surrounding neighborhoods associated with the use of new, mixed-use development at Rentschler Field will be minimized with a 50-foot buffer area with no development that will parallel the property boundary bordering residential zones around the site. This buffer currently exists in many locations and it will be improved in specific areas if needed. Construction will be limited to daytime hours to minimize associated noise impacts.

### **3.1.3 Light**

#### **3.1.3.1 Existing Conditions**

Nighttime illumination levels in the area surrounding Rentschler Field are typical of urban industrial/commercial/residential areas. The UTC facilities are illuminated for safety and security, local commercial establishments are well lighted, including signage, and street lighting exists on all roadways and interchanges. There is considerable night sky glow in the area.

The Roberts Street/Silver Lane intersection is well lit by cutoff streetlights, which direct most of the light downward and allow only a small amount of the light to escape above the fixture. High mast lights along I-84 are visible from the Roberts Street/Silver Lane intersection. Streetlights continue east and west along Silver Lane with minimal lighting impacts. Silver Lane appears fairly dark in areas away from the major intersections with Roberts Street and Main Street. The residences to the northeast of the Roberts Street/Silver Lane intersection are impacted minimally by street lighting in the intersection, due to the presence of tall trees between the roadway and the residences.

Cutoff streetlights line Brewer Street between Forbes Street and Main Street, providing moderate lighting of the roadway. Lighting at Pratt & Whitney is visible from Brewer Street near Main Street, and at locations where Pratt & Whitney access roads intersect with Brewer Street. Otherwise, lighting of Rentschler Field is not visible from Brewer Street due to the presence of a vegetative buffer around the project area.

The Main Street/Willow Street intersection is lit by cutoff streetlights, and businesses and industries in the area are well lit with both lighting for parking lots and signage. Therefore, this intersection is fairly well illuminated, creating sky glow in the vicinity.

Mercer Avenue, which is primarily residential, is lined with typical overhead cutoff streetlights that provide moderate lighting of the roadway. The same conditions exist along Simmons Road.

A traffic signal is present at the Silver Lane/Forbes Street intersection, as well as cutoff streetlights around the intersection and along both Forbes Street and Silver Lane. The lighting at this intersection is typical of residential areas.

The access to EHGEMS is proposed to be located adjacent to EHHS, which is already well-lit with downward directed flood lights and other lighting within the parking lots and tennis courts.

There is periodic lighting of night sports events at the Stadium. The Stadium has four 125-foot tall light poles with 316 light fixtures designed for night-time events, with an average of 131 foot candles ([www.rentschlerfield.com](http://www.rentschlerfield.com)), as measured on the field. The lighting is focused on the field. Most events are planned for daytime and therefore the night illumination by the Stadium is infrequent. There is also lighting associated with entrances, interior roadways, parking lots and walkways. All exterior lighting fixtures are full cutoff fixtures.

#### **3.1.3.2 Transportation Impacts**

Two aspects of the potential impact of the site lighting must be considered: Sky glow, and spill light, or light trespass. Sky glow is defined as light emanating directly from light fixtures and light reflected from the ground. The impact of sky glow diminishes as a function of distance from the site. Spill light is defined as the amount of direct light leaving the site. At a practical level, spill

light in the range of 1 to 2 footcandles on adjacent residential yards would generally be considered a negative impact. When spill light is considered objectionable or when it exceeds ordinance limits it is called light trespass (BEC, 2000).

Lighting impacts resulting from the Roberts Street/Silver Lane infrastructure improvements will be associated with changes in street lighting for nighttime illumination and in traffic signal lighting. Increased illumination will result at the intersection in order to provide safety for vehicles using the intersection. The grade-separated intersection will be elevated and therefore the light source will be higher.

Street lights will be required for the proposed Route 2 westbound off-ramp to High Street and the Route 2 eastbound off-ramp to High Court. This will result in additional lighting within the Route 2/Brewer/Main/High Streets area.

Increases in light impacts will not result from the proposed transportation improvements for Phase 1 development, including improvements at the Main Street/Willow Street intersection, Simmons Road, and the Silver Lane/Forbes Street intersection.

The preferred access plan to the EHGEMS will not cause a significant increase in light to the residential area along Forbes Street and Godar Terrace. However, there will be a new traffic signal on Forbes Street across from Godar Terrace that will be a new illumination source that could impact residents at or near the Forbes Street/Godar Terrace intersection. During the design phase of the project, means of minimizing light impacts will be investigated including the use of coned and shielded lights and the elimination/reduction of blinking signal operations.

#### **3.1.3.3 Site Development Impacts**

Lighting for the Rentschler Field development will be consistent with lighting typical of the proposed uses, including restaurant, educational, medical/fitness, office/technical, retail, entertainment, residential, manufacturing, cultural, hotel, and sports uses. In general, lighting will be required for building entrances, interior roadways, parking lots and walkways. Educational, medical/fitness, and office/technical uses will typically take place during normal business hours. Nighttime lighting impacts from these areas will be limited to security lighting for walkways and parking lots. Contemporary lampposts will light the internal roadway system.

The development will adhere to the parking regulations (Section 209) of the Town of East Hartford Zoning Regulations, which state,

“Lighting levels for any exterior illumination, whether required or not required but provided, shall provide not less than one-half (.5) foot-candle of illumination for any access drive or walk so lit but shall not show any direct light source beyond any *lot line* nor more than one-half (.5) foot-candle beyond any *lot line*.”

The replacement of the existing unlighted airfield with the site development will result in additional sky glow in the area. Light trespass from the site could potentially impact residences on Silver Lane, Brewer Street, Dobson Road, and Roxbury Road. However, such impacts are unlikely due to the 50-foot buffer that will be left along the property boundary bordering residential zones around the site. Tall trees that already exist within this buffer area along Brewer Street, Dobson Road, and Roxbury Road should be allowed to remain, to the maximum extent practicable.

The proposed Stadium Parking areas will be illuminated during evening events. Parking areas within Rentschler Field will not cause any negative impacts to surrounding neighborhoods. Temporary lighting within Stadium Parking Area 1, located north of Forbes Street and west of Simmons Road at the UTC softball fields, will be a new lighting source for the neighborhood. Temporary lighting will be used only when the area is being used for parking and will be aimed at the interior of the property to minimize impacts. There is the potential for light trespass onto residential properties along Simmons Road, Forbes Street, Gold Street, Clement Road and Echo Lane during evening Stadium events.

#### **3.1.3.4 Cumulative Impacts**

Additional sky glow in the vicinity of Rentschler Field will result from a combination of increased lighting at some of the transportation improvements, notably, those at the Roberts Street/Silver Lane intersection and the Route 2/Brewer/Main/High Streets area, and Rentschler Field site development. Lighting impacts may occur to residences on Silver Lane near Roberts Street, Clement Road, the Forbes Street/Godar Terrace intersection, Brewer Street, Dobson Road, Roxbury Road, Simmons Road, Forbes Street, Gold Street and Echo Lane.

#### **3.1.3.5 Mitigation**

Increased illumination will be necessary at the Roberts Street/Silver Lane intersection in order to provide safety for vehicles using the intersection. During the design phase of the project, efforts will be made to minimize impacts to residential properties along Silver Lane. This will include the use of downward-directed lights that reduce light scatter.

Site lighting within Rentschler Field will be designed in accordance with the Town of East Hartford Manual of Technical Design and discussion with Town staff. Site lighting using cutoff or semi-cutoff light fixtures will direct the light downward to the surfaces being illuminated, minimizing spill light and sky glow. Landscaping can be used to block the view of sky glow from adjacent residences. A 50-foot buffer area with no development will parallel the property boundary bordering residential zones around the site. This buffer currently exists in many locations and it will be improved in specific areas if needed. Utilities will likely be located underground, typically reducing the elevation of light fixtures.

Downward directed lighting will be used within Stadium Parking Area 1, located north of Forbes Street and west of Simmons Road at the UTC softball fields, to minimize light trespass onto residential properties along Simmons Road, Forbes Street, Gold Street, Clement Road and Echo Lane during evening Stadium events.

### **3.1.4 Traffic, Parking, Circulation**

#### **3.1.4.1 Existing Conditions**

The Rentschler Field site and the Pratt & Whitney campus are accessed via driveways along Brewer Street, Willow Street, Main Street and Silver Lane.

Regional access to the site is made via the various expressways servicing the site; I-84 to the east and west, Route 2 from the south, east of the Connecticut river, Route 15 from the southwest, west of the Connecticut River, and I-91 from the north, west of the Connecticut River. Once motorists exit the expressway system, they travel on the local roads to gain access to the site.

Motorists approaching the site along I-84 from the east, exit onto Roberts Street and access the site via the site drive opposite Roberts Street at the Silver Lane / Roberts Street intersection. Vehicles using I-84 from the west either use the Roberts Street exit or exit onto Route 2 southbound and access the site via Willow Street.

Motorists approaching the site along Route 2 from the south, exit onto Main Street and either turn right onto Brewer Street and use the Pratt & Whitney Drive opposite Glenn Road or continue north and use the Main Street drives.

Motorists approaching the site along I-91 from the south connect to Route 3 followed by Route 2 west to Main Street to access the project area. Those traveling on Route 15 from the southwest can access the site via Main Street to Willow Street, or by connecting to Silver Lane.

Motorists approaching the site along I-91 from the north, exit onto I-84 eastbound and access the site via Route 2 or Roberts Street.

The following are the functional classifications of the various roadways used to access the site:

- I-84 – Principal Arterial – Interstate
- I-91 – Principal Arterial – Interstate
- Route 2 – Principal Arterial – Other Expressway
- Route 15 – Principal Arterial – Other Expressway
- Main Street – Principal Arterial – Other (south of Route 2 – Minor Arterial)
- Silver Lane – Minor Arterial
- Roberts Street – Minor Arterial
- Simmons Road – Minor Arterial
- Willow Street – Collector
- Brewer Street – Collector

Main Street, a principal arterial, is oriented in a north-south direction. In the vicinity of the site, it has two lanes in each direction with additional turn lanes added at major intersections. To the south, approximately 1,100 feet north of Brewer Street, Main Street divides into a one-way couplet with High Street. This one-way couplet continues south to Curtis Street with Main Street as one-way northbound and High Street one-way southbound. Development along Main Street is predominantly commercial and industrial.

Silver Lane is a minor arterial oriented in an east-west direction. Silver Lane from Main Street to the Route 15 ramps is generally one lane in each direction with turning lanes added at major intersections. Between the Route 15 ramps and Roberts Street it has two lanes eastbound and one westbound lane. East of Roberts Street, Silver lane widens to two lanes in each direction. Development along Silver Lane is mixed residential and commercial.

Roberts Street is a minor arterial oriented generally in an east-west direction. In the vicinity of the site, it has two lanes in each direction with additional turn lanes added at major intersections. Development along Roberts Street is predominantly commercial.

Brewer Street is an east-west collector street. In the vicinity of the site, it has one lane in each direction with additional turn lanes added at major intersections. Development along Brewer Street is predominantly residential with commercial businesses at its junction with Main Street.

Willow Street is a collector street oriented in an east west direction. It connects Riverside Drive and the Route 2 eastbound ramps to the west with Main Street and then continues east into the Pratt & Whitney campus. Development along Willow Street is mixed residential and commercial, west of Main Street and industrial within the campus.

Table 3.1.4-1 presents the anticipated 2008 Average Daily Traffic (ADT) that are expected on the various roadways surrounding the site. The most heavily traveled roadway segments are Main/High Streets north of Brewer Street, Main Street between Brown Street and the Main/High Street split and Roberts Street from the I-84 WB off ramp to Silver Lane.

Table 3.1.4-2 presents the anticipated LOS for the 2008 Conditions. The 2008 conditions include the proposed Phase 1 development on Rentschler Field and the small-scale improvements to the Roberts Street/Silver Lane intersection. The PM peak hour was selected as the analysis period because traffic volumes are higher in the PM versus the AM peak hour.

The LOS is determined differently for signalized intersections, unsignalized intersections with multi-way STOP, and unsignalized intersections with STOP control on the minor street approaches. For signalized intersections and unsignalized intersections with multi-way STOP control, the analysis considers the operation of all traffic entering the intersection and the LOS is determined for the overall conditions at the intersection. For unsignalized intersections with STOP control on the minor street, the analysis assumes that through and right-turning traffic on the major street is not affected by traffic on the side streets. Hence, the LOS is determined for the movements on the side street and the left-turn movement from the major street onto the side street. Levels of Service are defined by the average delay per vehicle as indicated below.

#### Signalized Intersections

| Level of Service | Avg. Delay/Vehicle (in Seconds) |
|------------------|---------------------------------|
| LOS A            | < 10.0                          |
| LOS B            | > 10.0 and < 20.0               |
| LOS C            | > 20.0 and < 35.0               |
| LOS D            | > 35.0 and < 55.0               |
| LOS E            | > 55.0 and < 80.0               |
| LOS F            | > 80.0                          |

### Unsignalized Intersections

| Level of Service | Avg. Delay/Vehicle (in Seconds) |
|------------------|---------------------------------|
| LOS A            | < 10.0                          |
| LOS B            | > 10.0 and < 15.0               |
| LOS C            | > 15.0 and < 25.0               |
| LOS D            | > 25.0 and < 35.0               |
| LOS E            | > 35.0 and < 50.0               |
| LOS F            | > 50.0                          |

Levels of Service for unsignalized intersections can receive a letter beyond F. This is known as an ICU LOS.

The Traffic Flow Diagram showing the 2008 Traffic Volumes are presented in Appendix E.

**Table 3.1.4-1. Average Daily Traffic (ADT) in the Project Area, 2008**

| Street Name    | Location                 | Direction | ADT    |
|----------------|--------------------------|-----------|--------|
| Brewer Street  | West of Glen Road        | B         | 8,800  |
| Silver Lane    | West of Mercer Ave       | B         | 14,300 |
| Silver Lane    | East of SR 518           | E         | 8,000  |
| Silver Lane    | East of SR 518           | W         | 7,200  |
|                |                          | B         | 15,200 |
| Willow Street  | West of SR 517 (Main St) | E         | 3,100  |
| Willow Street  | West of SR 517 (Main St) | W         | 2,200  |
|                |                          | B         | 5,300  |
| Main Street    | South of Brewer St       | N         | 13,400 |
| Main Street    | North of Brewer St       | N         | 10,100 |
| High Street    | North of West Brewer St  | S         | 11,400 |
|                |                          | B         | 21,500 |
| Main Street    | South of Brown St        | N         | 7,600  |
| Main Street    | South of Brown St        | S         | 8,000  |
|                |                          | B         | 15,600 |
| Roberts Street | West of I-84 WB On Ramp  | E         | 8,300  |
| Roberts Street | West of I-84 WB On Ramp  | W         | 7,000  |
|                |                          | B         | 15,300 |

Source: 2005 traffic counts with annual growth factor applied  
E=eastbound, W=westbound, B=both directions

**Table 3.1.4-2. 2008 PM Peak Hour Levels of Service**

| Intersection                                    | PM Peak                  |   |
|---|--------------------------|---|
|   | Signalized Intersections | Unsignalized Intersections <sup>(1)</sup> |
| Roberts Street @ I-84 WB Off Ramp/Access Road   | B                        |   |
| Robert Street @ I-84 EB Ramps                   | D                        |   |
| Silver Lane @ Forbes Street                     | D                        |   |
| Silver Lane @ Simmons Road                      | A                        |   |
| Silver Lane @ Robert Street/Pratt Whitney       | C                        |   |
| Silver Lane @ Mercer Avenue/I-84 HOV            | A                        |   |
| Brewer Street @ Glenn Road/P&W                  | A                        |   |
| High Street @ West Brewer St. / Route 2 WB      | D                        |   |
| Main Street @ Rt 2 WB Off Ramp                  | B                        |   |
| Main Street @ Brewer Street                     | B                        |   |
| Main Street @ Ensign Street/P&W                 | B                        |   |
| Main Street @ Crosby Street/P&W                 | B                        |   |
| Main Street @ Willow Street/Willow Street Ext.  | D                        |   |
| Main Street @ Willys/Brown Streets              | A                        |   |
| Main Street @ Route 15 NB Ramps/CSP Union Drive | B                        |   |
| Main Street @ Silver Lane                       | D                        |   |
| Rt 15 Sb On-Ramp @ Silver Lane                  |                          | D   |
| East River Drive @ Rt 15 SB Ramps               | A                        |   |
| High Street @ P&W Drive                         | B                        |   |

Source: Fuss&O'Neill

<sup>(1)</sup> Synchro Unsignalized Intersection ICU LOS

#### **3.1.4.2      Transportation, Site Development and Cumulative Impacts**

The following analysis takes into account full site development, as proposed by TMG, as well as other reasonably foreseeable traffic generating/altering activities near the project area. Therefore, this subsection accounts for transportation, site development and cumulative impacts in total.

The traffic impact of the proposed development was determined by calculating the number of trips that are expected to be generated by the development and subsequently assigning the trips to the surrounding roadway system (Figure 3.1.4-1). The Institute of Transportation Engineers (ITE) Trip Generation, Sixth Edition, 1997 contains trip generation rates for various different land uses. In addition to The ITE Trip Generation, The Connecticut DOT has determined separate trip generation rates for some specific uses such as Supermarket and Doughnut Shops. The anticipated trip distribution for the anticipated 5.7 million square feet of development is presented in Figure 3.1.4-1. This figure presents the breakdown of the various development uses anticipated on the site, along with the anticipated trip generation for each use. The trip generation rates represent the number of trips expected to be added to the roadway during the peak hours of the adjacent street.

A seven percent "capture rate" has been used. This means that the generated volumes have been reduced by 7% to account for the fact that people will make multiple stops within the site. For example, a worker in one of the office buildings may stop at the coffee shop in the morning on the way to work and then stop at the supermarket on the way home. For this site, that will account for one trip approaching the site in the morning and one trip leaving the site in the afternoon. However, without adjusting the number of trips calculated using the ITE Trip Generation formulas, the visits to the coffee shop and supermarket would also be counted as new trips, therefore artificially inflating the number of new trips. A 20% pass-by credit is also applied to the volumes to account for motorists that would otherwise be on the surrounding network anyway, but diverted to the site on their way to some other destination. The latest edition of the ITE Trip Generation Manual suggests the percent of pass-by trips could be as high as sixty percent for retail developments. The Connecticut DOT allows a reduction in the number of generated trips added to the roadway system due to pass-by trips of up to ten percent of the existing traffic on the road fronting the site or twenty percent of the generated traffic, whichever is less.

The direction from which vehicles are expected to arrive and depart the site is important in determining the impact that the generated traffic will have on the roadway system. The trip distribution is based on the relative populations in the towns surrounding East Hartford, the existing roadway network, both the expressway system serving outlying communities and the local roadway network, and the location of various uses in the site. The global trip distribution is presented in Figure 3.1.4-2.

Fuss & O'Neil prepared the Trip Generation, Trip Distribution, Capture Rate analyses and Pass-By Trip Reductions for the Full Build of the Rentschler Development. Purcell Associates reviewed their assumptions and calculations and found that their work conforms with normal traffic engineering practices. Additionally, Connecticut DOT Planning Staff were consulted on the basic assumptions to make sure they would find them acceptable as well.

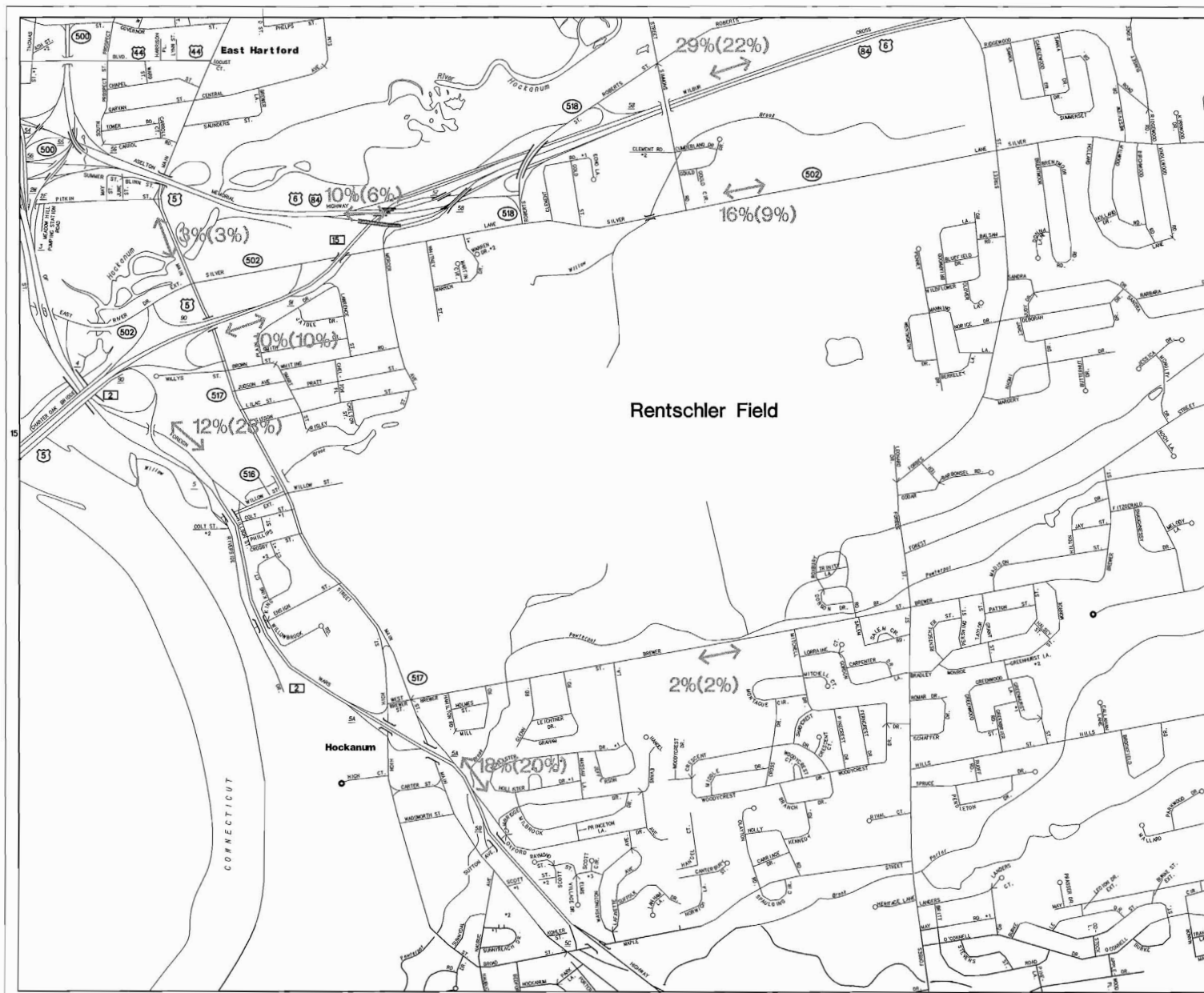
Traffic flow Diagrams showing the Detailed Trip Distribution, Generated Trips, and Pass-By Trips are presented in Appendix E.



**INFRASTRUCTURE IMPROVEMENT/  
 RENTSCHLER FIELD DEVELOPMENT  
 ENVIRONMENTAL IMPACT EVALUATION  
 EAST HARTFORD, CT**

**SCALE**  
 1" = 1000'  
**DATE**  
 AUGUST 2004

**FIGURE 3.1.4-1  
 INTERSECTIONS STUDIED**



# LEGEND

XX = Retail / Entertainment  
(XX) = Other Uses

INFRASTRUCTURE IMPROVEMENT/  
RENTSCHLER FIELD DEVELOPMENT  
ENVIRONMENTAL IMPACT EVALUATION  
EAST HARTFORD, CT

SCALE  
1" = 1000'  
DATE  
AUGUST 2006

**FIGURE 3.1.4-2**  
**REGIONAL TRIP DISTRIBUTION**

As shown in Table 3.1.4-3, several intersections in the project area would operate at unacceptable levels of service (E or worse) with full build site development in place for the year 2020 without roadway improvements. The following intersections would have deficient levels of service:

- Roberts Street/I-84 WB Off Ramp/Brookside Lane - AM and PM;
- Roberts Street/I-84 WB On Ramp (Eastern Junction) – PM;
- Roberts Street/I-84 EB Ramps – AM;
- Silver Lane/Roberts Street/Airport Road - AM and PM;
- Silver Lane/Mercer Avenue/I-84 HOV Ramps – PM;
- Brewer Street/Glenn Road/P&W – AM;
- High Street/West Brewer Street/Route 2 WB On Ramp – PM;
- Main Street/Carter Street – AM;
- Main Street/Route 2 WB Off Ramp – AM;
- Main Street/Brewer Street – AM and PM;
- Main Street/Willow Street/Willow Street Extension - AM and PM; and
- Willow Street/Airport Road/P&W - AM and PM.

A total of ten (12) intersections in the study area would operate at LOS E or worse during the AM and/or PM peak hours as a result of full site development and no roadway improvements. These include, most notably, the Roberts Street/Silver Lane/Airport Road intersection and several intersections in the Route 2/Brewer/Main/High Streets area.

Increased traffic on Mercer Avenue may aggravate the existing traffic and circulation issues at Silver Lane School during school opening and closure. Otherwise, the additional site-generated traffic does not warrant improvements to Mercer Avenue.

Traffic generated to and from the proposed EHGEMS to be located off Forbes Street will not significantly affect traffic around Rentschler Field. An analysis of these traffic impacts is presented in Section 2.3.6.

Traffic generated during Stadium events will overlap with PM peak hour traffic from the site development and Saturday mid-day peaks as well. The overlapping traffic will cause an increase in traffic that could result in deficient levels of service for several of the intersections in and near the project area. As presented in Section 1.2.2, an adaptable Stadium Parking Plan will be developed by the Stadium Traffic Management Committee which consists of representatives from DOT, OPM, UTC, TMG, local and state police, stadium parking operators and others, and will be expanded to include representatives of the major stakeholders at Rentschler Field. The Plan will be adapted to the changing travel patterns and roadway conditions. Temporary controls will be required and permanent variable message signing will be considered to aid in way-finding during Stadium events.

**Table 3.1.4-3. Intersection Levels of Service for 2020 Full Site Development Without Roadway Improvements**

| Intersection  | AM LOS                   |   | PM LOS                   |   |
|---|--------------------------|---|--------------------------|---|
|   | Signalized Intersections | Unsignalized <sup>(1)</sup> Intersections | Signalized Intersections | Unsignalized <sup>(1)</sup> Intersections |
| Robert Street @ Simmons Road                        | C                        |   | C                        |   |
| Roberts Street @ I-84 WB Off Ramp/Brookside La.     | F                        |   | F                        |   |
| Roberts Street @ I-84 WB On Ramp (Eastern Junction) |                          | B   |                          | E   |
| Roberts Street @ I-84 WB On Ramp (Western Junction) |                          | A   |                          | B   |
| Robert Street @ I-84 EB Ramps                       | F                        |   | D                        |   |
| Silver Lane @ Forbes Street                         | C                        |   | D                        |   |
| Silver Lane @ Simmons Road                          | A                        |   | B                        |   |
| Silver Lane @ Robert Street/Airport Road            | F                        |   | F                        |   |
| Silver Lane @ Mercer Avenue/I-84 HOV                | C                        |   | F                        |   |
| Silver Lane @ Rt 15 NB Off-Ramp                     |                          | B   |                          | D   |
| Cambridge Drive @ Route 2 WB On Ramp                |                          | A   |                          | A   |
| Sutton Street @ Route 2 EB Off Ramp                 |                          | A   |                          | A   |
| Sutton Street @ Main Street                         |                          | A   |                          | B   |
| Brewer Street @ Forbes Street                       | B                        |   | C                        |   |
| Brewer Street @ Glenn Road/P&W                      | F                        |   | A                        |   |
| High Street @ West Brewer St. / Route 2 WB          | B                        |   | F                        |   |
| High Street @ Route 2 E.B. Ramps                    |                          | A   |                          | A   |
| High Street @ High Court                            |                          | A   |                          | A   |
| High Street @ Carter Street                         |                          | A   |                          | A   |
| Main Street @ Carter Street                         |                          | E   |                          | B   |
| Main Street @ Rt 2 WB Off Ramp                      | F                        |   | C                        |   |
| Main Street @ Brewer Street                         | F                        |   | F                        |   |
| Main Street @ Ensign Street/P&W                     | N/A                      |   | B                        |   |
| Main Street @ Crosby Street/P&W                     | A                        |   | B                        |   |
| Main Street @ Willow Street/Willow Street Ext.      | F                        |   | F                        |   |
| Main Street @ Willys/Brown Streets                  | A                        |   | A                        |   |
| Main Street @ Route 5/15 NB Ramps/Csp Union Drive   | B                        |   | B                        |   |
| Main Street @ Silver Lane                           | B                        |   | C                        |   |

<sup>1)</sup> Synchro Unsignalized Intersection ICU LOS

#### **3.1.4.3     Mitigation**

In order to allow the surrounding roadways to operate at acceptable Levels of Service (Signalized intersections at D or better), improvements to several roadways and intersections are needed. The proposed roadway improvements are listed here and described and mapped in detail in Section 1.2.1

- New grade-separated intersection at Roberts Street/Silver Lane;
- Realigned I-84 westbound off ramp at Roberts Street;
- Lane additions along Silver Lane from the Route 15 ramps to Simmons Road;
- New connection between Willow Street, within the UTC campus, and Mercer Avenue;
- Lane additions at the Main/Willow Street intersection;
- New connector road, East Hartford Boulevard North, from the Rentschler Field site to Main and High Streets;

These improvements, collectively, are sufficient to accommodate the proposed 5.7 million sf of mixed use development and anticipated background traffic as shown in Table 3.1.4-4. As shown, all of the intersections would operate at acceptable levels of service (A-D) during the AM and PM peak hours. This includes new intersections created at Roberts Street/Silver Lane and at East Hartford Boulevard South/Main Street.

The proposed Mercer Avenue connection could aggravate the existing traffic and circulation issues at Silver Lane during school AM and PM peak hours. An appropriate course of action to minimize impacts during these times will be taken before the Mercer Avenue connection is constructed.

**Table 3.1.4-4. Intersection Levels of Service, 2020 with Full Site Development and Full Roadway Improvements**

| Intersection                                      | AM LOS                   |                                | PM LOS                   |                                |
|---|--------------------------|--------------------------------|--------------------------|--------------------------------|
|   | Signalized Intersections | Unsignalized Intersections (1) | Signalized Intersections | Unsignalized Intersections (1) |
| Brewer Street @ Forbes Street                     | B                        |                                | C                        |                                |
| Brewer Street @ Glenn Road/P&W                    | A                        |                                | A                        |                                |
| Cambridge Drive @ Route 2 WB On Ramp              |                          | A                              |                          | A                              |
| East River Drive @ Jayce Street/ Route 2 E.B.     | B                        |                                | B                        |                                |
| East River Drive @ Route 15 SB Ramps              | A                        |                                | A                        |                                |
| East River Drive @ Route 2 WB Off-Ramp            | A                        |                                | A                        |                                |
| High Street @ Carter Street                       |                          | A                              |                          | A                              |
| High Street @ High Court                          |                          | A                              |                          | A                              |
| High Street @ P&W Drive                           |                          | A                              |                          | A                              |
| High Street @ Main St/East Hartford Blvd.         | D                        |                                | C                        |                                |
| High Street @ Route 2 E.B. Ramps                  |                          | A                              |                          | A                              |
| High Street @ Rt 2 EB Off Ramp                    |                          | A                              |                          | A                              |
| High Street @ West Brewer St. / Route 2 WB        | C                        |                                | B                        |                                |
| Main Street @ Brewer Street                       | C                        |                                | B                        |                                |
| Main Street @ Carter Street                       |                          | E                              |                          | B                              |
| Main Street @ Crosby Street/P&W                   | A                        |                                | B                        |                                |
| Main Street @ Ensign Street/P&W                   | N/A                      |                                | A                        |                                |
| Main Street @ Route 5/15 NB Ramps/Csp Union Drive | B                        |                                | B                        |                                |
| Main Street @ Route 2 WB Off Ramp                 | C                        |                                | C                        |                                |
| Main Street @ Silver Lane                         | B                        |                                | C                        |                                |
| Main Street @ Willow Street/Willow Street Ext.    | D                        |                                | D                        |                                |
| Main Street @ Willys/Brown Streets                | A                        |                                | A                        |                                |
| Robert Street @ I-84 EB Ramps                     | B                        |                                | B                        |                                |
| Robert Street @ East Hartford Blvd.               | B                        |                                | C                        |                                |

**Table 3.1.4-4 continued. Intersection Levels of Service, 2020 with Full Site Development and Full Roadway Improvements**

| Intersection  | AM LOS                   |                                | PM LOS                   |                                |
|---|--------------------------|--------------------------------|--------------------------|--------------------------------|
|   | Signalized Intersections | Unsignalized Intersections (1) | Signalized Intersections | Unsignalized Intersections (1) |
| Robert Street @ Simmons Road/Hillside St              | C                        |                                | C                        |                                |
| Robert Street Connector @ Rentschler Field Stadium    |                          | A                              |                          | A                              |
| Roberts Street @ I-84 WB Exit                         | C                        |                                | B                        |                                |
| Roberts Street @ I-84 WB On Ramp (Western Junction)   |                          | A                              |                          | A                              |
| Rt 15 SB On-Ramp @ Silver Lane                        |                          | B                              |                          | D                              |
| Silver Lane @ Forbes Street                           | C                        |                                | D                        |                                |
| Silver Lane @ Mercer Avenue/I-84 HOV                  | B                        |                                | D                        |                                |
| Silver Lane @ Robert Street Connector                 | C                        |                                | C                        |                                |
| Silver Lane @ Rt 15 NB Off-Ramp                       |                          | B                              |                          | D                              |
| Silver Lane @ Silver Lane NB Connector                | B                        |                                | D                        |                                |
| Silver Lane @ Simmons Road                            | A                        |                                | C                        |                                |
| Sutton Street @ Main Street                           |                          | A                              |                          | B                              |
| Sutton Street @ Route 2 EB Off Ramp                   |                          | A                              |                          | A                              |
| Willow Street @ Airport Road/P&W                      | D                        |                                | D                        |                                |
| Willow Street @ P&W Drive                             |                          | E                              |                          | D                              |
| Willow Street Ext. @ Rt 2 EB Off Ramp/Riverside Drive |                          | E                              |                          | B                              |

<sup>(1)</sup> Synchro Unsignalized Intersection ICU LOS  
Source: Purcell Associates

### **3.1.5 Utilities**

#### **3.1.5.1 Water Supply**

##### ***Existing Conditions***

The Metropolitan District Commission (MDC) provides potable water and fire protection to the entire Town of East Hartford, including the project area. The MDC is a non-profit municipal corporation chartered in 1929 to provide regional potable water and sewage services. East Hartford is served by both water treatment facilities operated by the MDC, including the West Hartford Water Treatment Facility and the Reservoir 6 Water Treatment Facility in Bloomfield. The West Hartford facility has a capacity of 50 million gallons per day (MGD) and the Reservoir 6 facility has a current capacity of 21 MGD with a potential capacity of up to 80 MGD. The area surrounding Rentschler Field is supplied by the West Hartford Reservoir.

The water distribution system surrounding Rentschler Field is laid out in a grid pattern with substantially sized distribution lines (Figure 3.1.5-1). A 12-inch diameter water main within the Silver Lane right-of-way in the vicinity of Simmons Road connects to parallel 10-inch and 4-inch lines near Gold Street, which connect to a 16-inch line west of Mercer Avenue. This line connects to a 20-inch line in Main Street that follows Main Street north to Pitkin Street. To the east, a major 30-inch diameter distribution line extends from Silver Lane to Penny Drive and down Forbes Street to Brewer Street, with smaller lines running parallel. These lines service the High School. A 12-inch line intersects an 8-inch line at the Silver Lane/ Forbes Street intersection.

A 12-inch diameter water main runs along Brewer Street from Forbes Street to just west of Glenn Road, and connects to an 8-inch line which extends west down Brewer Street to Main Street. The segment of Brewer Street between Main Street and High Street does not contain water utilities. A 10-inch line follows Main Street from the Brewer Street intersection back toward Silver Lane. A 16-inch line runs parallel to the 10-inch line for most of this distance. The 10-inch line continues south on Main Street from Brewer Street with a parallel 6-inch line. There are also privately owned parallel 8-inch and 12-inch/16-inch water mains along Willow Street from Airport Road to Main Street. No water mains are present on Willow Street extension. An 8-inch line extends down Mercer Avenue from Silver Lane to Willow Street (Figure 3.1.5-1).

MDC mapping indicated the presence of an 8-inch water main on Roberts Street between Simmons Road and Brookside Lane. This line connects to an 8-inch main on Simmons Road, which crosses over I-84, as shown in Figure 3.1.5-1. Water mains are not shown on Roberts Street from Brookside Lane to Silver Lane, its nearby interchange with I-84, or I-84 itself.

Within the Route 2 – Main Street – Brewer Street improvement area, a 24-inch and an 8-inch water main follow High Street from Brewer Street south to Carter Street.

The MDC system formerly supplied upwards of five MGD to the Pratt & Whitney facility just west of the project area. Several connections were utilized for Pratt & Whitney, including a 16-inch diameter line from Main Street under Willow Street. In 2000, usage at the facility was estimated at approximately one MGD and water conservation and reuse measures were anticipated to reduce consumption by an estimated additional 25% (BEC, 2000).

Potable water and fire protection is provided to the Stadium through a 12-inch service connection from the Silver Lane water main in the vicinity of Simmons Road. The 12-inch water main extends to the south and around the Stadium on its eastern side. It divides into two 10-inch pipes that connect to the Stadium. Figure 3.1.5-1 shows the utility connections. Potable water is used for sinks, showers, and toilets in restrooms and locker rooms, food preparation areas for concessions and restaurants, drinking fountains, playing field irrigation, Stadium wash down (i.e. cleaning) and fire protection.

### ***Transportation Impacts***

The Roberts Street/Silver Lane infrastructure improvements are not expected to impact water mains in Roberts Street or Simmons Road. There is the potential for existing underground water mains in Silver Lane to present conflicts during construction. The proposed construction activities at the Route 2/Brewer Street/Main Street/High Street area also have the potential to result in conflicts with existing water mains. However, procedures will be followed to minimize interruption of service during construction. Utilities will be relocated as needed, in consultation with the MDC. The need for relocations will be addressed during the design phase, and procedures to limit interruption of service to local homes and businesses will be incorporated as an element of construction sequencing plans during the design phase.

Widening of the I-84 ramps will not result in impacts to water utilities, as none are present within the ramps.

Proper precautions will be taken to minimize contact with water utilities in the Main Street/Willow Street Intersection during construction of lane widening (i.e. "Call Before You Dig", "Dig Safe"). The roadway infrastructure improvements at this location are not expected to require relocation of utilities or interruption of service. The same may be expected for improvements to the Silver Lane/Forbes Street Intersection and Main Street/Silver Lane Intersection, widening of Silver Lane, and construction of the access to Stadium Parking Lot #1 off of Simmons Road.

Existing underground utilities at the EHHS/CIBA campus may be impacted by grade changes and changes in the road and parking alignment associated with construction of the access road to EHGEMS. Procedures will be followed to minimize interruption of service during construction. The need for relocation of utilities will be addressed during the design phase.

The demand on potable water supply will not increase in the long term due directly to these infrastructure improvements. Water required during construction will likely be minimal and will either be transported to the site or taken from the existing water supply if available on-site.

### ***Site Development Impacts***

As water utilities are absent throughout the majority of Rentschler Field, construction on the site will not impact existing water lines. Service connections to supply potable water and fire protection to the proposed development are proposed to be brought to the project area with connections to the networks on Silver Lane, Brewer Street, Willow Street, and in the Stadium utility corridor (Figure 3.1.5-1). The internal site water system will be constructed within the roadway network, with connections to the individual buildings on site. The design of the water system will incorporate a looped network and will be reviewed and approved by the MDC. The addition of looped routes through the Rentschler Field project area will increase available water supply paths, thereby creating more redundancy in the system and making the network stronger.

The projected water usage by the proposed 5.7 million square feet development was estimated using published water use rates from the following sources:

1. Dewberry & Davis, Land Development Handbook: Planning, Engineering, and Surveying, 1996. McGraw-Hill, Inc.
2. Viessman & Hammer, Water Supply and Pollution Control, 1998. Addison-Wesley.
3. Gehm & Bregman, Handbook of Water Resources and Pollution Control, 1976. Van Nostrand Reinhold.

The estimated average daily water usage for the proposed development, including EHGEMS, is 1.2± MGD. This, combined with Pratt & Whitney's current demand of approximately 1 MGD, is much less than the 5± MGD which was formerly supplied to the Pratt & Whitney facility. Estimated peak flows are summarized in the following table.

**Table 3.1.5-1. Estimated Water Usage (gallons per day).**

|  | <b>Average Daily Water Use, gpd</b> | <b>Maximum Daily Water Use, gpd</b> | <b>Maximum Hourly Water Use, gpd</b> |
|--|-------------------------------------|-------------------------------------|--------------------------------------|
| <b>Rentschler Field Site Development</b> | 1,249,000                           | 1,873,000                           | 2,497,000                            |

In a letter dated June 28, 2006, the MDC indicated that the estimated water services for the proposed Rentschler Field development, summarized above, can be provided (Appendix A). These estimated services are based on a preliminary analysis and the developer will be required to confirm required flow rates in consultation with MDC as part of final design of the various components of the development.

Water utilities will not be extended to the new Stadium parking areas planned for the site.

Water utilities will be extended from the High School or from Forbes Street to accommodate water demand at the EHGEMS. The estimated average daily demand for the EHGEMS is 7,800 gallons per day (gpd).

#### ***Cumulative Impacts***

Water utilities may need to be relocated in some of the areas of transportation improvements. This need will be evaluated during the design phase.

The site development is predicted to require approximately 1.2 MGD of potable water. Overall demand from site development and Pratt & Whitney will be approximately 40% of Pratt & Whitney's former demand of 5 MGD. Therefore, it is expected that the MDC will be able to service the site development without the need for significant upgrades to the water treatment system or the surrounding distribution system. The developer will be responsible for providing any necessary upgrades to the existing system and the water utilities within the site.

#### ***Mitigation***

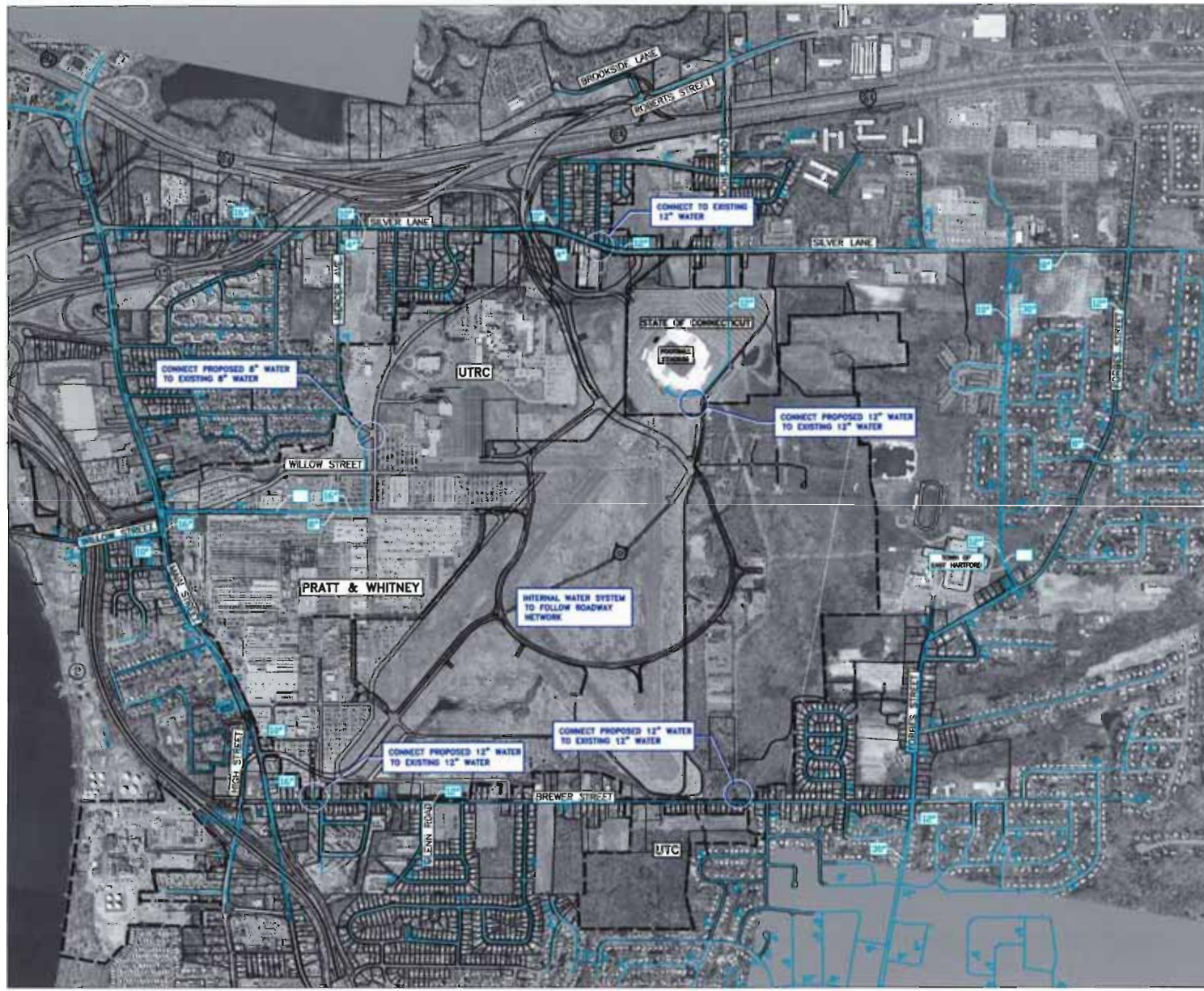
In the areas of transportation improvements, utilities will be relocated as needed, in consultation with the MDC. The need for relocations will be addressed during the design phase, and

procedures to limit interruption of service to local homes and businesses will be incorporated as an element of construction sequencing plans during the design phase. For the construction phases of the transportation improvements and site development work, "Call-Before-You-Dig" or "Dig Safe" will be contacted to locate all underground utilities and prevent interruption of service to the area.

No impacts to water utilities are expected to occur for improvements to the I-84 ramps, thus no mitigation will be required.

As each individual site within Rentschler Field is developed, the developer and/or users of such sites must confirm required flow rates in consultation with MDC as part of final design of the development. Should additional lines or expansion of existing lines be required to serve water to the development, the developer and/or users of individual sites will be responsible for the design and construction of additional infrastructure. Water conservation measures such as low flow toilets will be incorporated into the buildings in accordance with local and State regulations.

Flow test data will also be utilized to verify adequate pressure and quantity for fire protection at the proposed building elevations. If flow pressure and volumes do not meet fire protection standards, system improvements would be warranted. Hydrant locations will be determined by the developer in conjunction with the East Hartford Fire Department as site plans are submitted for the planned roadways and structures. The East Hartford Fire Department allows a maximum distance of 500 feet between fire hydrants.



# LEGEND

- UTRC PROPERTY BOUNDARY
- OTHER PROPERTY BOUNDARY (MDC)
- EXISTING WATER LINES (MDC)
- PROPOSED WATER MAIN CONNECTION LOCATIONS (TMG, 2005)

AERIAL PHOTO (SBC, 2002 AND COL-EAST, 2005)

**INFRASTRUCTURE IMPROVEMENT/  
RENTSCHLER FIELD DEVELOPMENT  
ENVIRONMENTAL IMPACT EVALUATION  
EAST HARTFORD, CT**

SCALE  
1" = 1200'  
DATE  
AUGUST 2006

**FIGURE 3.1.5-1  
EXISTING & PROPOSED  
WATER SUPPLY SYSTEM**

### **3.1.5.2     Sanitary Sewer**

#### ***Existing Conditions***

The MDC owns and operates the sanitary sewer collection system and wastewater pollution control facility servicing the Town of East Hartford and the project area. The entire Rentschler Field area is surrounded by large trunk sewer lines, including the Silver Lane trunk sewer in close proximity to the project area (Figure 3.1.5-2). This trunk sewer flows by gravity from east to west, and it increases from a 21-inch to a 24-inch diameter pipe at the Simmons Road intersection. The Silver Lane trunk sewer discharges into the 33-inch diameter southern interceptor sewer line. This sewer line flows by gravity directly into the MDC Water Pollution Control Facility, located on the south side of Pitkin Street, just west of Main Street. East of the project area, the Penney Drive branch trunk sewer extends from Forbes Street north to the Silver Lane trunk sewer. This trunk sewer increases from a 10-inch to a 12-inch diameter pipe in the vicinity of Wakefield Circle. The Pewterpot Brook trunk sewer collects sewage flows from residential areas southeast of the project area and connects to the 24-inch Brewer Street trunk sewer at Dobson Road. The Brewer Street trunk sewer extends to the west and turns south onto Glenn Road. An 8-inch diameter line services the remaining section of Brewer Street between Glenn Road and Main Street. Sewer lines between 6-inch and 12-inch diameter service areas along Main Street and residential areas west of the project area, and eventually discharge to the southern interceptor sewer line.

Buildings within the Pratt & Whitney facility connect to a 10-inch line on Main Street and an 8-inch line on Brewer Street (MDC, 2005). The Stadium sanitary sewage is disposed of through a 21-inch diameter service connection into the 24-inch diameter Silver Lane trunk sewer in the vicinity of Simmons Road. The main concourse and upper levels of the Stadium are designed for gravity flow, whereas the lower level uses pressure ejector flow pumps to convey wastewater to the gravity sewer line. Wastewater is discharged from the restrooms, locker rooms, food preparation areas, drinking fountains, and the Stadium washdown collection system.

The 15-inch Roberts Street trunk sewer begins at Simmons Road and follows Roberts Street to the east. A 10-inch line begins on Roberts Street just east of Brookside Lane and connects to this trunk sewer. A 16-inch line follows Simmons Road and crosses I-84. An 8-inch sewer line runs parallel to a segment of the entrance ramp from Willow Street Extension to I-84. Within the Route 2/ Brewer Street/Main Street/High Street improvement area, a 12-inch sewer line crosses under the exit ramp from Route 2 to Main Street to get from Hamilton Road to Main Street. A 12-inch sewer main follows High Street south of Brewer Street to Carter Street (Figure 3.1.5-2).

The MDC wastewater treatment facility has a design flow capacity of 12.5 MGD and is currently operating at approximately 7 MGD. The average daily plant flow was 6.99 MGD for 2004 and 7.40 MGD for the first three months of 2005 (MDC, 2005). This facility is an activated sludge plant that currently operates under a National Pollutant Discharge Elimination System (NPDES) permit. The NPDES permit considers the effect of a facility's capacity on overall wastewater management in the vicinity. That is, if a facility is permitted under NPDES, then its capacity is within the expected cumulative wastewater impact for the area.

In an effort to assess existing capacity of the Silver Lane trunk sewer before the Stadium was built, the MDC metered flow conditions in Spring 2000 in both wet and dry weather events. The baseline flow in the trunk sewer was 0.8 MGD, with an average daily peak of 1.2 MGD. During a significant wet weather event, 3" of rain, the peak flow was 2.0 MGD, significantly lower than the 5.1 MGD capacity of the trunk sewer. The sewer was monitored over several days of wet weather during which the pipe never reached one half of its capacity (BEC, 2000).

More recent sewage flow monitoring was conducted by the MDC between August and October of 2005 in Silver Lane, Brewer Street, and the Stadium service connection. The average daily flow in the Silver Lane trunk sewer was 1.0 MGD, with an average daily peak of 2.0 MGD. This is slightly higher than what was measured in 2000. Stadium events did not have a significant impact on those flows; however, rain events contributed to peak flows of up to 4.1 MGD. The Brewer Street line exhibited an average daily flow of 0.8 MGD and an average peak flow of 1.4 MGD. The maximum peak flow was 2.0 MGD after a significant rainfall. The average daily flow in the Stadium connection was 0.01 MGD overall and 0.06 MGD during days on which there were Stadium events. The average peak flow was 0.06 MGD overall and 0.45 MGD during days on which there were Stadium events.

### ***Transportation Impacts***

The Roberts Street/Silver Lane infrastructure improvements are not expected to impact sewer mains in Roberts Street or Simmons Road. There is the potential for impacts to existing underground sewer mains in Silver Lane during construction. The proposed construction activities at the Route 2/Brewer Street/Main Street/High Street area also have the potential to impact existing sewer mains. Utilities will be relocated as needed, in consultation with the MDC. The need for relocations will be addressed during the design phase, and procedures to limit interruption of service to local homes and businesses will be incorporated as an element of construction sequencing plans during the design phase.

Widening of the I-84 ramps will not result in impacts to sewer utilities, as none are present within the ramps.

Proper precautions will be taken to minimize contact with sewer utilities in the Main Street/Willow Street Intersection during construction of lane widening (i.e. "Call Before You Dig", "Dig Safe"). The roadway infrastructure improvements at this location are not expected to require relocation of utilities or interruption of service. The same may be expected for improvements to the Silver Lane/Forbes Street Intersection and Main Street/Silver Lane Intersection, widening of Silver Lane, and construction of the access driveway to Stadium Parking Lot #1 off of Simmons Road.

Existing underground utilities at the EHHS/CIBA campus may be impacted by grade changes and changes in the road and parking alignment associated with construction of the access road to EHGENS. Procedures will be followed to minimize interruption of service during construction. The need for relocation of utilities will be addressed during the design phase.

Sewage generation will not be directly impacted by these infrastructure improvements.

### ***Site Development Impacts***

Construction activities at the Rentschler Field site have little potential to result in conflicts with existing sewer mains. As the majority of the site to be developed is an existing airfield, it is unlikely that sewer mains will be encountered during construction.

Sanitary sewage from the proposed Rentschler Field development will be disposed of through service connections to the existing trunk sewers in Silver Lane and Brewer Street, as well as to the 21-inch sanitary sewer within the Stadium utility corridor. Figure 3.1.5-2 shows the proposed utility connections. The proposed internal site sewer network submitted to the Town of East Hartford with the original Master Plan for development consisted of gravity subsystems, each ending at a sanitary sewer lift station. The lift station would be required due to the extremely flat topography to raise the sewage to an elevation that could flow by gravity into the next subsystem,

eventually discharging to the existing mains surrounding the site. Subsequent to the original Master Plan, a Master Grading and Drainage Plan was developed which calls for fill to be used to raise the interior site elevation (Fuss & O'Neill, 2006). Raising the elevation of the site will reduce the need for sewer lift stations and allow for the majority of the system to flow by gravity to the existing mains surrounding the site. However, the need for lift stations may arise depending on final grading of individual developments within the site. The lift stations may be constructed above ground or completely below ground. The overall system will be designed to require as few lift stations as possible through coordination with MDC at various phases of the project. Each lift station required will be designed in accordance with the MDC design standards. The internal site sewer network will consist of a variety of pipe sizes ranging from 8-inches to 18-inches, depending on the volume, grade, and length of run (The Matos Group, 2005). The final network layout and sizes will be designed in cooperation with the MDC. Sewer lines will be constructed within the proposed roadway right-of-ways as much as possible, to facilitate access and maintenance. After construction, the internal site sewer system, including all pump stations, will be owned, operated, and maintained by the MDC as part of its public sewer system.

The potential sewage generation for the developed site, including the EHGEMS, was estimated using published sewage generation rates from the following sources:

1. Connecticut Public Health Code, 2004.
2. Metcalf & Eddy, Wastewater Engineering: Treatment, Disposal and Reuse, 3rd ed., revised by G. Tchobanoglous and F.L. Burton, 1991. McGraw-Hill Inc.
3. Dewberry & Davis, Land Development Handbook: Planning, Engineering, and Surveying, 1996. McGraw-Hill, Inc.

The estimated average daily sewage generation for the development is 0.8± MGD. The distribution of discharges to Silver Lane and Brewer Street were estimated based on the Master Plan and general topography of the site. Peak flows were estimated using peak flow factors based on average flow, provided by resource #3, listed above. The following table summarizes the distribution of flows, with peak flows indicated. It is assumed that infiltration/inflow will be negligible, as new sewer systems will be constructed with watertight, gasketed connections.

Should the proposed development result in the need to upgrade any existing sewer lines to accommodate required capacity, the developer will be responsible for the costs of these upgrades.

Sewer utilities will not be extended to the Stadium parking areas. Portable toilets will be located at Stadium parking areas to accommodate Stadium event attendees.

**Table 3.1.5-2. Estimated Sewage Generation.**

| Discharge Location | Average Sewage Flow, gpd | Peak Flow Factor | Peak Sewage Flow, gpd |
|--------------------|--------------------------|------------------|-----------------------|
| Silver Lane        | 455,000                  | 5.0              | 2,300,000             |
| Brewer Street      | 350,000                  | 5.2              | 1,800,000             |

### ***Cumulative Impacts***

Some of the transportation improvements may require the relocation of existing sewer mains, to be evaluated during the design phase.

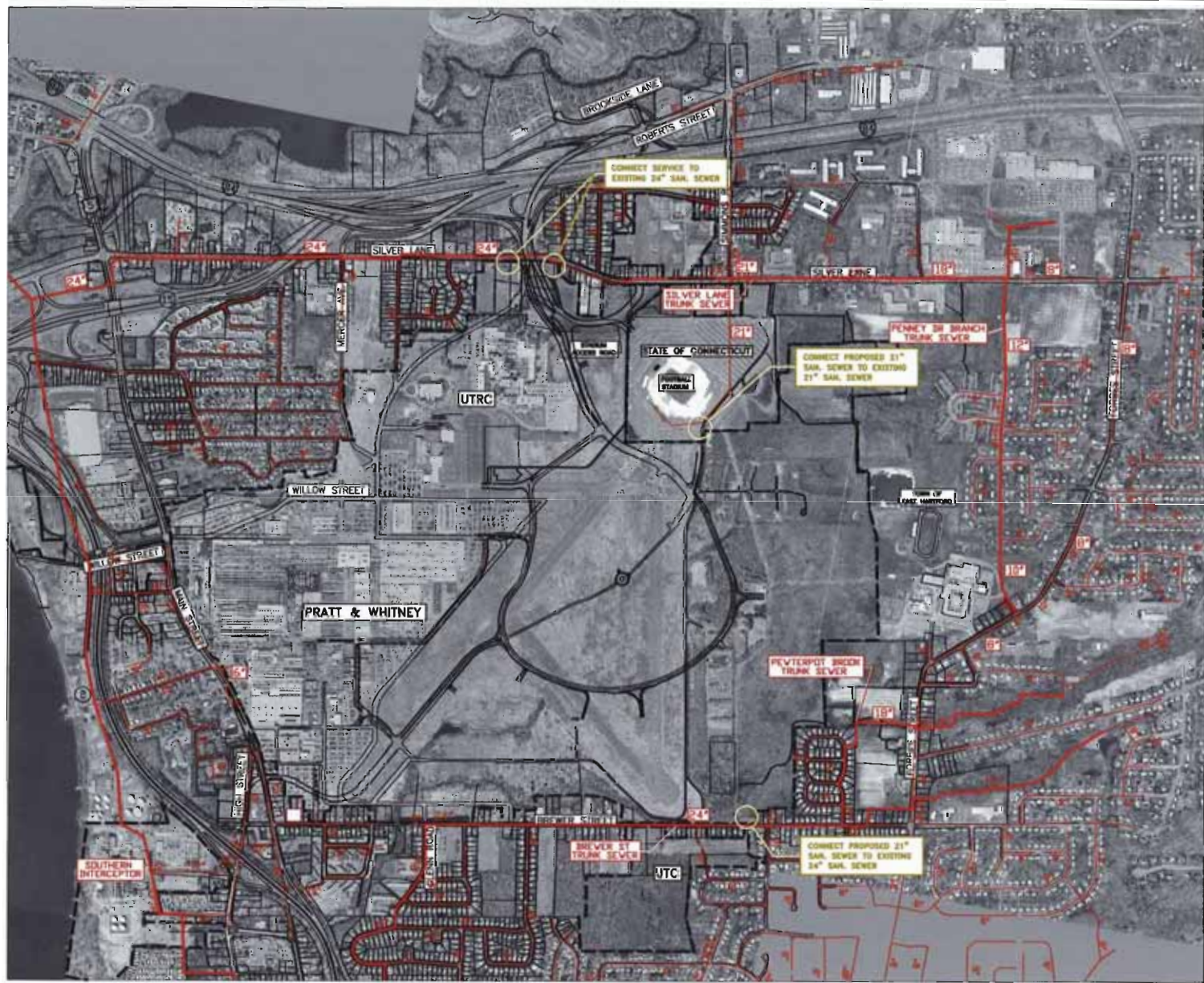
Additional sanitary sewage generated by the proposed development of the Rentschler Field site will be discharged to sanitary mains in Silver Lane and/or Brewer Street. There is currently approximately 5 MGD of flow capacity at the MDC wastewater treatment facility and the site is expected to generate an additional 0.8± MGD. Therefore, the estimated volume and flow rate of sewage is not expected to exceed the existing capacity of the receiving wastewater treatment facility. The predicted sewage generation will be carefully examined during the design phase, in order to determine if upgrades to existing infrastructure will be required.

### ***Mitigation***

Within transportation improvement areas, utilities will be relocated as needed, in consultation with the MDC. The need for relocations will be addressed during the design phase, and procedures to limit interruption of service to local homes and businesses will be incorporated as an element of construction sequencing plans during the design phase. For construction associated with the transportation improvements and site development, "Call-Before-You-Dig" or "Dig Safe" will be contacted prior to excavation to locate all underground utilities and prevent interruption of service to the area.

No impacts to sewer utilities are expected to occur for improvements to the I-84 ramps, thus no mitigation will be required.

The developer will coordinate with MDC to establish the final sewage flow rates associated with the development. It will be the responsibility of the developer to design and construct any sewer infrastructure required to accommodate additional sewage flow from the development. Sewage generation rates will be minimized by using water conservation measures such as low flow toilets in buildings, in accordance with local and State regulations. The developer will encourage tenants to design LEED (Leadership in Energy and Environmental Design) – certified buildings to reduce water usage and sewage discharge.



**LEGEND**

- UTC PROPERTY BOUNDARY
- OTHER PROPERTY BOUNDARY (MDC)
- EXISTING SANITARY SEWER (MDC)
- EXISTING TRUNK SEWER (MDC)
- PROPOSED SANITARY SEWER (TMG, 2005)

AERIAL PHOTO (SBC, 2002 AND COL-EAST, 2005)

**INFRASTRUCTURE IMPROVEMENT/  
RENTSCHLER FIELD DEVELOPMENT  
ENVIRONMENTAL IMPACT EVALUATION  
EAST HARTFORD, CT**

SCALE  
1" = 1200'  
DATE  
AUGUST 2006

**FIGURE 3.1.5-2  
EXISTING & PROPOSED SANITARY SEWER  
UTILITY LAYOUT**

### **3.1.5.3     Stormwater**

#### ***Existing Conditions***

East Hartford has seven subwatersheds within the Town, all of which drain west to the Connecticut River. Rentschler Field is located within two of these subwatersheds, namely the Willow Brook subwatershed and the Pewterpot Brook subwatershed. These two subwatersheds are classified as sub-regional drainage basins according to the “Atlas of the Public Water Supply Sources and Drainage Basins of Connecticut” by the DEP, June 1982. The drainage divide between the two subwatersheds runs diagonally across the airfield, from northeast to southwest (Figure 3.1.5-3). This drainage divide takes piped stormwater drainage systems into consideration. Site conditions at the airfield convey stormwater to both the Willow Brook and Pewterpot Brook systems.

Willow Brook originates east of Ginger Lane and flows westward in an open channel north of Silver Lane and south of I-84. For most of its length, Willow Brook receives stormwater flows from urban surfaces, with dry weather base flows derived from shallow groundwater discharge. The channel is culverted under Cumberland Drive and Simmons Road and then directed southwesterly through a 72-inch diameter cross culvert under Silver Lane onto the Rentschler Field parcel. The channel conveys flows westward along the south side of Silver Lane for about two hundred feet and angles southwesterly toward UTRC. After passing through two short culvert sections, the brook enters a long culverted section at an inlet just north of UTRC, and exits the culvert west of Mercer Street and north of Willow Street. Willow Brook then flows to a cross culvert under Main Street, another culvert under Route 2 at the Willow Street interchange, and finally discharges to the Connecticut River (Figure 3.1.5-3).

In total, Willow Brook drains approximately two square miles of land, all of which is in East Hartford. In the late 1970s, an 84-inch diversion structure was constructed upstream of Applegate Lane between Forbes Street and Simmons Road. The purpose of this diversion was to substantially reduce the downstream flooding potential. The diversion pipe that reroutes high flows from Willow Brook north to the Hockanum River has a design capacity of 400 cubic feet per second (cfs) (Fuss & O'Neill, May 22, 2006). More details about this diversion structure are included in Section 3.2.2, Hydrology.

The headwaters of Pewterpot Brook are to the east in Manchester. The brook, which has a total watershed of approximately 4.5 square miles, flows westward through south central East Hartford, eventually draining to the Connecticut River. From Manchester, Pewterpot Brook flows westerly parallel to and south of Forest Street and is culverted under Forbes Street just north of Brewer Street. The brook then flows westerly in an open channel along the southern property line of Rentschler Field and turns south to a cross culvert under Brewer Street west of Glenn Road (Figure 3.1.5-3). The brook flows southerly to a cross culvert under Route 2 and continues generally south and southwest to Keeney Cove and the Connecticut River.

Rentschler Field is extremely flat and expansive, having variable depth to groundwater. In general, the area has sandy soils underlain by varved clay layers, which limit infiltration depth and contribute to high groundwater conditions. Some areas have only a few feet of unsaturated soil during seasonal high groundwater conditions. Rentschler Field, particularly in the runway areas, is currently drained by a system of catch basins and underdrains, which drain the shallow groundwater. The stormwater management ditches along the perimeter road to the east and west of the study area were created as part of the drainage system when the airfield was constructed in 1931. The ditches to the east of the study area are generally between 3 to 6 feet

below the elevation of the adjacent terrain. Stormwater from these ditches eventually drains into Pewterpot Brook to the south. The ditches to the west of the study area are generally very shallow, with little evidence of surface water. When they flow, these swales discharge stormwater to Willow Brook. In general, stormwater runoff from the north-western, developed part of the site drains to Willow Brook, while stormwater from most of the undeveloped airfield area and the wooded lands to the east is directed to Pewterpot Brook. Drainage from the Stadium site is directed to both Willow and Pewterpot Brooks.

Stormwater management features installed with the Stadium include the use of detention basins to the northwest, southwest, and southeast of the Stadium. These three basins receive stormwater runoff from the entire developed Stadium site. The detention basins are designed to achieve the goal of removing 80 percent of the total suspended solids, per the "General Permit for the Discharge of Stormwater and Dewatering Wastewater Associated with Construction Activities". All developed paved areas are drained by a system of pipes and catch basins with 2-foot deep sumps and trap hoods, oil and grit separators. Rainwater and irrigation runoff from the below-grade portions of the Stadium are pumped to the southeastern detention basin. The detention basin on the east of the site discharges to the Pewterpot Brook watershed, while those on the west of the site discharge to the Willow Brook watershed (Figure 3.1.5-3). Unpaved parking areas are surfaced with a fiber reinforced turf system (Turfgrids<sup>®</sup>) that allows infiltration of precipitation and stormwater. No underdrains or other formal storm drain system is installed in these areas. Unpaved drive lanes are surfaced with processed stone gravel without a formal storm drain system.

The Roberts Street/Silver Lane intersection and interchange with I-84 is maintained by the State of Connecticut. The DOT Right-of-Way Map for I-84 from Main Street easterly to the Manchester Town line indicates that stormwater drainage from Silver Lane at Roberts Street is conveyed towards the west down Silver Lane in a 15-inch reinforced concrete pipe (RCP). Roberts Street drainage between Silver Lane and just north of the I-84 crossing is conveyed to an open system under the Silver Lane off-ramp from westbound I-84. Several storm drains from this interchange area also drain to this open system. The open system allows for infiltration of stormwater, providing some attenuation of pollutants via filtration and adsorption. Overflow from this system drains into a catch basin and through a 36-inch RCP to a discharge easement located north of I-84. Drainage further to the east on Roberts Street is conveyed to a system of armored open channels located between Roberts Street and I-84. This open channel system also accepts stormwater drainage from I-84 east of Roberts Street and its westbound off-ramp to Roberts Street. Infiltration may also occur in this area. Overflow from the open channel system exits via a 54-inch RCP to the north. Stormwater drainage on Roberts Street between Brookside Lane and Simmons Road is maintained by the Town of East Hartford. One Town system of mostly 15-inch and 18-inch RCPs in front of # 340 Roberts Street discharges to the southeast of the Brookside Lane/Roberts Street intersection. I-84 is underlain by a grid of 4-inch to 6-inch diameter underdrains with larger perpendicular stormwater drains.

A series of storm drains increasing in size from 15-inch to 48-inch convey stormwater south along Main Street between High Street and Carter Street. This system collects drainage from West Brewer Street, High Street, and Carter Street, and discharges to Pewterpot Brook. South of Carter Street, another system of 15-inch and 18-inch RCPs conveys drainage from Wadsworth Street and a small portion of Main Street across Main Street to Pewterpot Brook. Based on CT DOT 1992 plans of bridge deck replacements on Route 2, it appears that storm drains which collect drainage from Route 2 are connected to drains in Main Street and High Street at their respective crossings.

Storm drains are present along Brewer Street between Forbes Street and High Street at various locations as shown on Figure 3.1.5-3. All drainage from this segment of Brewer Street is discharged to Pewterpot Brook. Storm drains along Forbes Street and those in the vicinity of Roxbury Road convey stormwater to Pewterpot Brook. The parking lot for EHHS, off of Forbes Street, drains to a detention basin located to the west of Leonard Drive and just east of the site property boundary. The detention basin discharges to the west, into the site (Figure 3.1.5-3). Drainage from other areas around the EHHS are conveyed to the "P and F" Pond located to the northwest of the high school track.

According to Town of East Hartford mapping, Willow Street Extension is crossed by a 15-inch stormwater drain which outlets to Willow Brook. Another system, which drains Colt Street and Philips Street, crosses Willow Street Extension near Hillson Street and discharges to the concrete box culvert that conveys Willow Brook beneath Route 2. This system is also connected to catch basins at the intersection of Willow Street Extension and the entrance ramp to Route 2. East of Main Street, stormwater drains extend down Willow Street to Main Street and discharge to Willow Brook to the north.

All information about Town-owned stormwater utilities was obtained from the Drainage Outfall Location Plan for NPDES Storm Water Phase II for the Town of East Hartford. At the time of this EIE, the stormwater drainage structures had been located by Global Positioning System (GPS) and mapped, however, pipe sizes, connections, and directions had not yet been field-verified.

### ***Transportation Impacts***

Typical construction practices have the potential to result in the exposure of disturbed soils to stormwater. Stormwater runoff over these exposed areas tends to erode soils and carry sediment to other downgradient locations, including neighboring properties, public roads, and receiving waterbodies. The effect of this sediment transport may include harmful impacts to private property, public safety, and water quality of surface waters. Roadways covered in sediment may result in slippery driving conditions, while sediment carried by stormwater into watercourses and/or wetlands has the potential to result in siltation and excessive nutrient loading. These impacts are a possible result of any construction associated with the proposed infrastructure improvements, magnet school roadway, or other development discussed in this EIE. However, the mitigation measures discussed below will prevent the harmful impacts of stormwater runoff associated with construction.

Increased amounts of impervious surfaces often associated with development and decreases in times of concentration due to the use of piped stormwater management systems have the potential to result in increases in peak discharge rates and in total volume of runoff. Increases in peak discharge rates may lead to increased erosion at the discharge location, resulting in increased sedimentation of receiving water bodies. An increase in the total volume of runoff within a watershed is a result of a decrease in the volume of infiltration due to the addition of impervious surfaces, as well as a result of a potential decrease in evapotranspiration due to the removal of vegetation. A lessening of infiltration may reduce groundwater levels, which in turn may negatively impact wetland systems and watercourses that depend on groundwater to maintain normal water levels. On the other extreme, downstream wetland systems and watercourses that receive increased volumes of runoff may be negatively impacted due to increases in the duration and level of flooding associated with rainstorms. Increases in flooding can result in harmful effects to wildlife and vegetation, as well as to downstream property.

Net increases in impervious surfaces and increases in the use of piped stormwater systems are expected to be minimal for the infrastructure improvements at the I-84 ramps, Main Street/Willow

Street intersection, the Silver Lane/Forbes Street intersection, the Main Street/Silver Lane intersection, and the Silver Lane mainline. These areas are already developed with paved roadways, and changes to the roadway system are not expected to result in significant increases in paved, impervious area. However, the final design of these improvements will incorporate necessary updates to the stormwater drainage systems. Other modifications to the storm drainage system may be required in those areas, due to changes in layouts or grades resulting in changes to stormwater flow patterns. More significant increases in impervious surfaces and the use of piped stormwater systems will result from the extension of Mercer Avenue, the Route 2/Brewer Street/Main Street/High Street area improvements, and the Roberts Street/Silver Lane intersection improvements. The relocation of stormwater utilities and associated discharge locations may also be necessary in some areas. There is the potential for slight widening of the paved access driveway to Stadium Parking Lot #1 from Simmons Road, which would result in a minor increase in impervious surface.

The proposed two-lane access road leading to the new EHGEMS will result in increases in impervious area, which will increase peak discharge rates and total volume of stormwater runoff. A system of catch basins and storm drains will be installed with the roadway and at least a portion of the flow in this system will ultimately discharge to the existing detention basin located southwest of the EHHS/CIBA parking lot. Stormwater management, including any necessary alterations to the existing detention basin or need for additional detention basins, will be determined during final design. Features of the storm drain system will control stormwater volumes, peak discharge rates, and water quality, as described below in the Mitigation section.

### **Site Development Impacts**

Increases in impervious surface area will result from development of the Rentschler Field site, including construction of the internal roadway. According to the *Master Grading and Drainage Plan, Rentschler Field Redevelopment* (Fuss & O'Neill, 2006), the impervious area on the site is predicted to increase by approximately 200 acres with the proposed development, from 430± acres to 630± acres of total impervious area. The increase in the amount of impervious surfaces can result in increases in peak discharge rates and in total volume of runoff. These potential impacts, and other associated impacts, such as erosion, sedimentation, and flooding, will be mitigated by a stormwater management plan as described below.

Traditional stormwater systems collect stormwater and convey it to receiving waterbodies as quickly as possible. The stormwater flows over the land surface and picks up pollutants including suspended solids, oils, greases, nutrients, pathogens and floatable debris. These pollutants are deposited directly in receiving waterbodies if pretreatment and on-site retention/detention is not included in the stormwater management plan.

The grass Stadium parking areas will be fiber reinforced turf systems, such as Turfgrids®, which consists of polypropylene fibers incorporated into the soil profile at a depth of 4 to 6 inches where they interlock with the root system to provide added strength. The system requires a base layer that will allow infiltration, with characteristics specified by the manufacturer. The characteristics of the local, onsite soils within the grass Stadium parking areas will be evaluated prior to installation for their ability to provide the required base layer, but material will be imported if necessary. No formal storm drain system, such as underdrains, will be required in these reinforced grass parking areas. Stormwater will be allowed to infiltrate in these areas, as opposed to paved parking, in which stormwater is typically directed into traditional catch basins and storm drains and conveyed to the receiving surface water as quickly as possible. Infiltration of stormwater provides increased flow attenuation and reduction of runoff flow rates, sedimentation and filtration of suspended particulates, and biodegradation of pollutants, reducing harmful impacts to receiving surface

water bodies that would otherwise occur with traditional piped storm drain systems. Potential sources of pollutants at the reinforced grass parking areas are motor vehicle fluids from parked cars, erosion from driving and foot traffic over the surface, and litter from event attendees. The fiber reinforced turf will prevent erosion from parking and pedestrian use. In addition, these surfaces are expected to be used only about a dozen times per year, so impacts to groundwater or surface water are expected to be minimal.

Construction of the EHGEMS building and grounds will result in an increase of impervious surfaces of approximately 6.5 acres. The resulting increases in peak discharge rates and runoff volumes with associated impacts will be mitigated as described below.

Construction at the Rentschler Field site, including construction of the EHGEMS, may result in increased erosion and sedimentation due to stormwater runoff coming into contact with disturbed soils. The flatness of the site will minimize this type of impact, except in situations where grading activities increase slopes on site. However, controls will be used on the site in construction areas to prevent these impacts, as described below.

### ***Cumulative Impacts***

Both the transportation improvements and site development are going to result in an increase in impervious surface within the area. Impervious surfaces prevent infiltration and lead to increases in stormwater volume and flow rates. Increases in peak discharge rates may lead to increased erosion at the discharge location, resulting in increased sedimentation of receiving water bodies. A lessening of infiltration may reduce groundwater levels, which in turn may negatively impact wetland systems and watercourses that depend on groundwater to maintain normal water levels. On the other extreme, downstream wetland systems and watercourses that receive increased volumes of runoff may be negatively impacted due to increases in the duration and level of flooding associated with rainstorms. Increases in flooding can result in harmful effects to wildlife and vegetation, as well as to downstream property.

Construction associated with the transportation improvements and site development has the potential to result in the exposure of disturbed soils to stormwater. Stormwater runoff over these exposed areas tends to erode soils and carry sediment to other downgradient locations, including neighboring properties, public roads, and receiving waterbodies. The effect of this sediment transport may include harmful impacts to private property, public safety, and water quality of surface waters.

### ***Mitigation***

During any construction associated with the infrastructure improvements, EHGEMS access roadway, building and grounds, or development on the Rentschler Field site, erosion and sedimentation control will be applied through the use of Best Management Practices (BMPs) to prevent polluted stormwater from running off and entering surface waters. BMPs are structural and non-structural practices that minimize the opportunities for stormwater to contact disturbed soils and for sediment-laden stormwater to leave the construction area, as well as remove sediment from stormwater before it can leave the site. Examples include covering stockpiles to minimize their exposure to water, limiting the area to be cleared at any one time, silt fence and haybale barriers, and detention basins.

Any construction project which involves the disturbance of one or more acres of land must satisfy conditions under the *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities*, administered by the DEP. This general permit, required pursuant to 40 CFR 122.26, applies to all discharges of stormwater and

dewatering wastewater from construction activities which result in the disturbance of *one or more* total acres of land area on a site regardless of project phasing. In the case of a larger plan of development, the estimate of total acres of site disturbance shall include, but is not limited to, road and utility construction, individual lot construction, and all other construction associated with the overall plan, regardless of the individual parties responsible for construction of these various elements. For construction projects with a total disturbed area (regardless of phasing) of greater than five acres, registration describing the site and the construction activity is required to be submitted to DEP prior to the initiation of construction in order for the discharges to be authorized by this general permit. Registrants must develop a Stormwater Pollution Control Plan (SWPCP) and maintain it on-site at all times to ensure that the use of BMPs and procedures followed during and after construction will address two components of stormwater pollution: (1) pollution caused by soil erosion and sedimentation during and after construction; and (2) stormwater pollution caused by use of the site after construction is completed, including, but not limited to, parking lots, roadways and the maintenance of grassed areas. For sites where more than 10 acres will be disturbed, the SWPCP must be submitted to the DEP. A goal of 80 percent removal of total suspended solids from the stormwater discharge shall be used in designing and installing stormwater management measures.

Any modifications to the stormwater drainage systems associated with the State roadway infrastructure improvement projects will be designed to comply with the DOT Drainage Manual and the Connecticut Stormwater Quality Manual. The DOT Drainage Manual provides guidance for the design of highway drainage, while the Connecticut Stormwater Quality Manual provides guidance on the measures necessary to protect receiving waters from the adverse impacts of post-construction stormwater runoff. Any impacts to wetlands as a result of stormwater management will be subject to approvals from the Town of East Hartford Inland-Wetlands/Environment Commission.

As currently envisioned, stormwater management features such as detention basins will be located along the western edge of the EHGEMS. The proposed two-lane access road leading to the new EHGEMS will incorporate a system of catch basins and storm drains. A portion of the stormwater flow from this system will ultimately discharge to the existing detention basin located southwest of the EHHS/CIBA parking lot. Details of the stormwater management systems associated with EHGEMS and the access roadway will be determined during final design. Features of the storm drain systems will control stormwater volumes, peak discharge rates, and water quality.

A stormwater management plan for development of the Rentschler Field site was included with the Matos Group Zone Change Application (2005). This plan is designed to meet three major goals for the handling and treatment of stormwater from the site:

1. No increase in peak discharge rates of stormwater, based on a design storm with a 100-year return frequency, as mandated by the Town of East Hartford. The design of the stormwater management system will mitigate increases in peak discharge rates for storms with a return frequency up to the 100-year event.
2. Meet DEP guidelines for the removal of 80% of total suspended solids from stormwater prior to discharge to a watercourse or wetland system.
3. Minimize the increase in total volume of runoff normally associated with development, in accordance with DEP guidelines.

A more detailed analysis of how these goals will be met is presented in the *Master Grading and Drainage Plan, Rentschler Field Redevelopment* (Fuss & O'Neill, 2006), herein referred to as "the

plan". This plan serves as a guide for the design of stormwater management within major areas of development, referred to as Pad Sites. The plan is based on a Development Program prepared by TMG which presents anticipated gross square footages for each type of land use expected and includes the internal loop road, access roads and Pad Sites. The plan may be updated to reflect changes in the Development Program as it evolves over time.

A watershed model was developed to evaluate the 100-year design storm under both existing and proposed conditions in order to determine the overall stormwater management requirements for each Pad Site. As each Pad Site is developed, final design of stormwater management systems must include analyses of the 2-, 5-, 10-, 25-, 50- and 100-year design storms. The model quantifies the volume of stormwater detention or retention, roof detention, or underground storage required within each Pad Site such that the 100-year peak stormwater discharge rates under the proposed condition do not exceed those under the existing condition at each proposed discharge location.

The required detention/retention/storage volumes to control peak discharge rates will be met by a combination of stormwater management measures throughout the site, which may include:

- Roof top detention design of some buildings,
- Wet detention areas (water features designed to maintain a base level water surface with capacity to detain additional water related to storm events),
- Dry detention areas (shallow areas designed to remain dry during dry weather and detain only water related to storm events),
- Detention canals and stormwater transmission swales (long narrow areas used for detention and or surface transmission of water related to storm events), and
- Underground detention systems (underground galleries used to store water related to storm events and which allow infiltration).

The breakdown and distribution of the various measures take into account soil characteristics, existing land uses and restrictions, land area available, topography, depth to groundwater, and other factors. Some of these measures will be the responsibility of TMG and others will be the responsibility of individual Pad Site developers. Those measures anticipated to be implemented and maintained by TMG include:

- Primary dry detention basins in Pad Sites 3, 6A and 6B;
- Primary swales in Pad Sites 2, 3, 5B and 6B;
- Primary drainage systems in Pad Sites 2 (pipe) and 4 (a box culvert); and
- Primary stormwater pumping station in Pad Site 3, to prevent localized flooding in that Pad Site during larger storms.

The detention/retention volumes that must be met by stormwater management measures to be implemented by individual Pad Site developers are presented in Table 3.1.5-3. The distribution of the various types of detention (dry vs. rooftop vs. underground vs. wet pond) is suggested, although the total required volumes must be satisfied. This allows flexibility for individual Pad Site developers in selecting measures that will best meet the requirements given current site conditions. For example, rooftop detention is an emerging trend in building architecture and stormwater management, but it is more expensive to implement than other types of detention. However, as the site becomes more developed and land becomes more valuable (scarce), rooftop detention may become a more attractive means, financially, for stormwater management than other more land intensive methods, such as dry detention. Each Pad Site developer will have to choose between using more land for traditional stormwater management and saving that

land for site development by applying less land intensive stormwater management practices, such as rooftop detention. Each Pad Site developer will be required to develop an Operation and Maintenance Plan for inspection, cleaning, repair and maintenance of stormwater management measures. The stormwater plan for each Pad Site will be subject to further review by local agencies. The application of rooftop detention will be subject to provisions of the building code, including special inspection.

**Table 3.1.5-3. Anticipated Stormwater Management Measures to be Implemented by Individual Pad Site Developers.**

| Pad Site     | Total Detention/<br>Retention Volume<br>(ac-ft) | Dry<br>Detention<br>(ac-ft) | Rooftop<br>Detention<br>(ac-ft) | Underground<br>Detention<br>(ac-ft) | Wet<br>Pond<br>(ac-ft) |
|--------------|---|-----------------------------|---------------------------------|-------------------------------------|------------------------|
| 1A           | 3.4   | 0.0                         | 1.5                             | 1.9                                 | 0.0                    |
| 1B           | 0.0   | 0.0                         | 0.0                             | 0.0                                 | 0.0                    |
| 1C           | 0.0   | 0.0                         | 0.0                             | 0.0                                 | 0.0                    |
| 1D           | 0.0   | 0.0                         | 0.0                             | 0.0                                 | 0.0                    |
| 2            | 11.3  | 2.6                         | 2.0                             | 6.5                                 | 0.0                    |
| 3            | 10.5  | 5.3                         | 0.0                             | 5.2                                 | 0.0                    |
| 4            | 27.3  | 0.0                         | 5.0                             | 6.3                                 | 15.6                   |
| 5A           | 2.2   | 1.1                         | 0.0                             | 1.1                                 | 0.0                    |
| 5B           | 3.3   | 1.0                         | 0.8                             | 1.5                                 | 0.0                    |
| 6A           | 10.2  | 3.0                         | 1.6                             | 5.6                                 | 0.0                    |
| 6B           | 5.8   | 1.9                         | 0.9                             | 3.0                                 | 0.0                    |
| 7A           | 3.4   | 2.7                         | 0.0                             | 1.0                                 | 0.0                    |
| 7B           | 0.0   | 0.0                         | 0.0                             | 0.0                                 | 0.0                    |
| 7C           | 0.0   | 0.0                         | 0.0                             | 0.0                                 | 0.0                    |
| 8A           | 0.8   | 0.0                         | 0.2                             | 0.6                                 | 0.0                    |
| 8B           | 5.0   | 0.0                         | 1.0                             | 4.0                                 | 0.0                    |
| 8C           | 0.49  | 0.0                         | 0.0                             | 0.49                                | 0.0                    |
| <b>TOTAL</b> | <b>83.69</b>                                    | <b>17.6</b>                 | <b>13</b>                       | <b>37.19</b>                        | <b>15.6</b>            |

Source: Fuss & O'Neill, 2006

The developer is considering the construction of a water feature, such as a pond or series of ponds, to be associated with the Cabelas site and other portions of the Project (Pad Site 4). The water feature will serve as a recreational amenity, as well as possibly providing stormwater detention. The development of this water feature, as with all stormwater management measures, will be subject to permitting requirements from the Town of East Hartford and DEP.

The stormwater management plan results in slight modifications to the boundary between the Willow Brook and Pewterpot Brook watersheds. These modifications may require a water diversion permit from DEP for the alteration of surface water flows.

The *Master Grading and Drainage Plan* includes an evaluation of infiltration capacity of the site in order to determine the feasibility of providing infiltration to reduce increases in runoff volume caused by development. Soil samples were collected from 52 test pits throughout the site and tested for hydraulic conductivity, a measure of the ability of soil to transmit water. Depth to groundwater was also measured in each test pit in February of 2006. These data were applied to a groundwater model to quantify infiltration capacity of each Pad Site. Pad Sites 2, 4, and 7 were deemed suitable for infiltration, based on soil and groundwater conditions, distribution of existing development, wetlands, and Environmental Land Use Restrictions (ELURs). Infiltration would be

applied to the maximum extent practical in order to reduce increases in runoff volume caused by development; however it is unlikely that infiltration will be enough to result in *no* increase in runoff volume. Groundwater quality must be further evaluated in Pad Site 7 prior to incorporating infiltration into the stormwater management plan for that Pad Site due to the potential presence of contamination. In any area where infiltration is applied, there must be a minimum 3 feet of separation between the bottom of the infiltration system and the groundwater table, according to the *Connecticut Stormwater Quality Manual*.

The final design of the stormwater management system for each Pad Site must include water quality treatment measures that will remove, at a minimum, 80% of total suspended solids (TSS) from post-development runoff. Such measures may include, but are not limited to, catch basins with 4-ft sumps, vegetative swales, biofilters, swirl concentrators, and oil/water separators. The DEP encourages non-structural stormwater management measures to dissipate and treat runoff, including infiltration using pervious paving, sheetflow from uncurbed pavement and vegetated swales. Catch basins installed in conjunction with roadway or parking lot paving should have deep sumps to trap sediments and hoods to trap oil and grease. If more than 1 acre of pavement drains to a common discharge point, a gross particle separator should also be installed. The DEP recommends that a gross particle separator with cyclonic or swirl technology be installed in conjunction with each outfall. The *Connecticut Stormwater Quality Manual* provides guidance on the measures necessary to protect the waters of the state from the adverse impacts of post-construction stormwater runoff.

A preliminary grading plan is included in the *Master Grading and Drainage Plan* to provide an overall framework for grading of individual Pad Sites. This plan will be modified as the project evolves. Grading was developed under the following assumptions (Fuss & O'Neill, 2006):

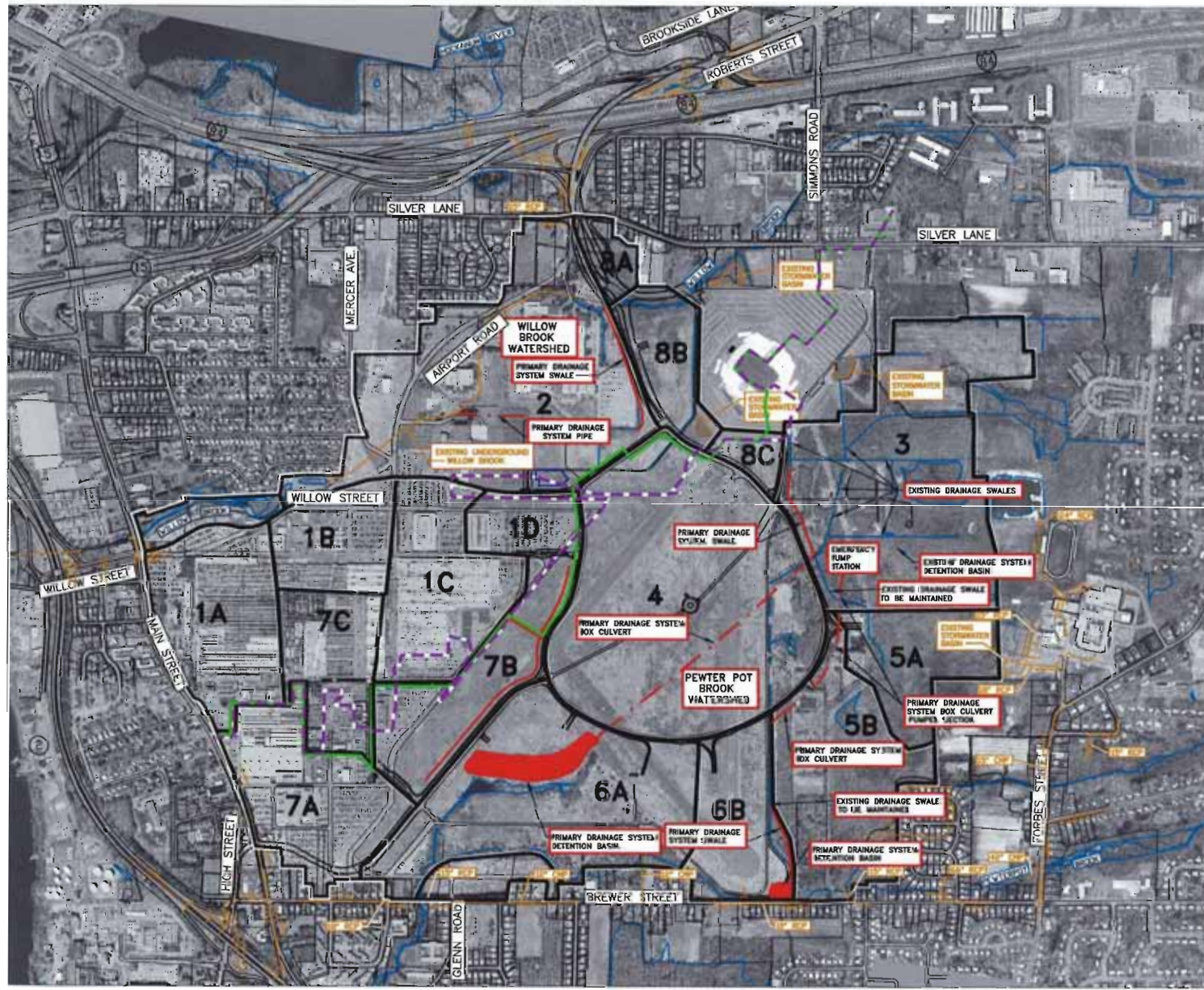
1. High ground water and drainage facilities would control how the sites are graded.
2. Each Pad Site developer would most likely use one location at which to control stormwater flows exiting the Pad Site.
3. Pad Site developers would use pipes and catch basins to convey stormwater to stormwater management facilities.
4. The minimum pipe slope for conveyance systems would be 0.5%.
5. Detention basins would be 4 feet deep and the bottom of the basin would be a minimum of 1 foot above the groundwater table.
6. The bottom of underground storage structures would also be 1 foot above the groundwater table.
7. The bottom of infiltration facilities would be 3 feet above the groundwater table. The proposed ground elevation at the infiltration facilities would be 8 feet above the groundwater table.

The overall site grading plan requires the importation of fill to raise the elevation over Rentschler Field by approximately 4 feet on average with a range of 2 to 7 feet (Fuss & O'Neill, 2006). However, the *Master Grading and Drainage Plan* is currently being revised in an attempt to reduce the amount/depth of fill. Grades will remain gentle and no extreme variations in topography will be incorporated into the grading plan. As site development progresses, the grading plan will evolve to meet the needs of the site overall as well as individual Pad Site developments.

Should any portion of the development site result in five acres or more of contiguous impervious surface, registration under DEP's General Permit to Discharge Stormwater Associated with Commercial Activities will be required. This general permit applies to all discharges from any

conveyance which is used for collecting and conveying stormwater and which is directly related to retail, commercial, and/or office services whose facilities occupy five acres or more of contiguous impervious surface. Registration is required to be submitted in order for the discharges to be authorized by this general permit.

Any detention structures proposed for the site must be reviewed by the Inland Water Resources Division for possible dam construction permit requirements pursuant to section 22a-403 of the CGS.



**LEGEND**

- EXISTING STORMDRAINS
- EXISTING WATER FEATURES
- FLOW DIRECTION
- OUTFALL LOCATION
- EXISTING WATERSHED BOUNDARY
- PROPOSED WATERSHED BOUNDARY
- PAD SITE BOUNDARY
- █ PROPOSED DETENTION
- PROPOSED SWALE
- PROPOSED DRAINAGE PIPES
- 7A** PAD SITE NUMBER

PROPOSED STORMWATER MANAGEMENT FROM RENTSCHLER FIELD MASTER GRADING AND DRAINAGE PLAN, FUSS & O'NEILL, MARCH, 2006.

AERIAL PHOTO (SBC, 2002 AND COL-EAST, 2005)

|   |                     |
|---|---------------------|
| <b>INFRASTRUCTURE IMPROVEMENT/<br/>RENTSCHLER FIELD DEVELOPMENT<br/>ENVIRONMENTAL IMPACT EVALUATION<br/>EAST HARTFORD, CT</b> | SCALE               |
|   | 1" = 1000'          |
|   | DATE<br>AUGUST 2006 |

**FIGURE 3.1.5-3  
EXISTING & PROPOSED  
STORMWATER MANAGEMENT**

### **3.1.5.4      Electrical, Telecommunications, and Natural Gas**

#### ***Existing Conditions***

Electricity is currently distributed in East Hartford by CL&P, which provides power by a combination of nuclear, oil, and hydropower generation sources. CL&P has an East Hartford substation located near the intersection of Simmons Road and Roberts Street. There are existing circuits on Silver Lane, Main Street and Brewer Street, as well as a 23 kV distribution cable that traverses the property from the intersection of Silver Lane and Simmons Road to Brewer Street along Linde Road. The CL&P 23 kV distribution cable on Rentschler Field, located to the east of the Stadium, primarily serves East Hartford High School and the Stadium. Figure 3.1.5-4 presents existing electric utilities around Rentschler Field. Electric utilities used for prior activities at the airfield may have been abandoned in place. There are no electric utilities located on Roberts Street near Silver Lane.

SBC provides telecommunication distribution services to East Hartford. Overhead telephone and cable lines are available along Silver Lane and other roads surrounding Rentschler Field. Telecommunication service lines enter the Stadium site from Silver Lane at Simmons Road and run in a north-south direction east of the Stadium. These lines turn to the west to the south of the Stadium and connect to the Stadium on its southern side.

CNG services the natural gas heating requirements of East Hartford. The existing CNG facilities at the anticipated external connection points at Rentschler Field consist of the following:

- An 8-inch steel service main in Silver Lane,
- An 8-inch service main along Willow Street near Airport Road, and
- A 12-inch steel service main in Brewer Street.

There is also an 8-inch steel service main that enters the property from Brewer Street along South Road. The Silver Lane gas line operates at approximately 45 to 50-pounds per square inch (psi) pressure in the project area and is interconnected within a strong looped network. Existing CNG facilities at other roads surrounding Rentschler Field are as follows:

- A 2-inch polyethylene service main in Warren Drive,
- A 12-inch steel service main in Main Street which continues along High Street where the two roads meet,
- A 2-inch polyethylene service main that follows Main Street north from Brewer Street and is capped near #330 Main Street,
- A 4-inch steel service main in Whitney Street that becomes a 6-inch line near Airport Road, and
- An 8-inch polyethylene service main in Mercer Avenue.

A gas main is also present in Forbes Street (Figure 3.1.5-4). There is a 4-inch polyethylene service main that goes to the Stadium. The Stadium project required electric, telecommunications and natural gas services, all of which were connected underground into the Silver Lane networks near Simmons Road.

### ***Transportation Impacts***

Impacts to electrical, telecommunications, or natural gas utilities resulting from the infrastructure improvements are expected to be minimal. The proposed construction activities have the potential to result in conflicts with existing in-ground utilities. Overhead utilities may require relocation at infrastructure improvement areas subject to road widening or addition of turning lanes. However, standard coordination procedures with the utility companies during design and construction phases will be followed to minimize interruption of service during construction. Any necessary relocations will be evaluated and incorporated into the final design of infrastructure improvements.

### ***Site Development Impacts***

The proposed development will require electric, telecommunications, and natural gas services, all of which are proposed to be brought into the project with connections to the networks on Silver Lane, Main Street, and Brewer Street. In general, the existing utility networks around the site have substantial capacity because they have been sized to go around the site. Utility connections for the site will enhance the existing networks and provide sufficient capacity to service the development. It is anticipated that these services will be brought into the site underground and will follow the internal roadway network.

In general, utility connections will be made to existing facilities in Silver Lane near the northwest corner of the Stadium parcel and to existing stubs at the southeast corner of the Stadium at the end of a public utility corridor through the Stadium site. Connections will also be made to existing facilities in Brewer Street and to existing facilities in the vicinity of Willow Street. These services will be sized to eventually connect to the site utility network.

CL&P will serve the development from their East Hartford substation located near the intersection of Simmons Road and Roberts Street. This substation currently has sufficient available capacity to handle the development and could be expanded when the anticipated load exceeds the rated capacity of the substation. New circuits will be constructed to the intersection of Simmons Road and Silver Lane as required to serve the load and will be connected to the site circuits through the Stadium utility corridor. Connections to service the site will also be made at Brewer Street, as shown in Figure 3.1.5-4. The electric circuit around the site is identified as an Easy Circuit and has sufficient available capacity to support accelerated development (The Matos Group, 2005).

The existing SBC telecommunications infrastructure around the site is capable of meeting all the telecommunications requirements of the development (The Matos Group, 2005). Connections to the existing system for supply to the site will be made at Brewer Street and Silver Lane as shown in Figure 3.1.5-4. Depending on details currently not available, such as direction of feeds, totality and types of services and product availability, it may be necessary for SBC to build one or more Next-Generation Digital Loop Carrier ("NGDLC") sites within the development. A site consists of equipment placed on or below grade within a 40' by 40' landscaped utility easement.

The internal site gas network will likely consist of 8-inch mains in the major roadways. The final network configuration and sizes will be designed in cooperation with CNG. The locations of the proposed connections to the existing system are shown in Figure 3.1.5-4. It is expected that the development can be served without the need for upgrades to the existing system (Paul Querfeld, CNG; Pers. Comm.; July, 2005).

Telecommunications or natural gas utilities will not be required at the proposed Stadium parking sites. However, electric utilities will be extended to the proposed Stadium parking sites to service

permanent lighting that will be installed. All utilities will be connected to the EHGEMS from existing distribution lines that currently serve the High School.

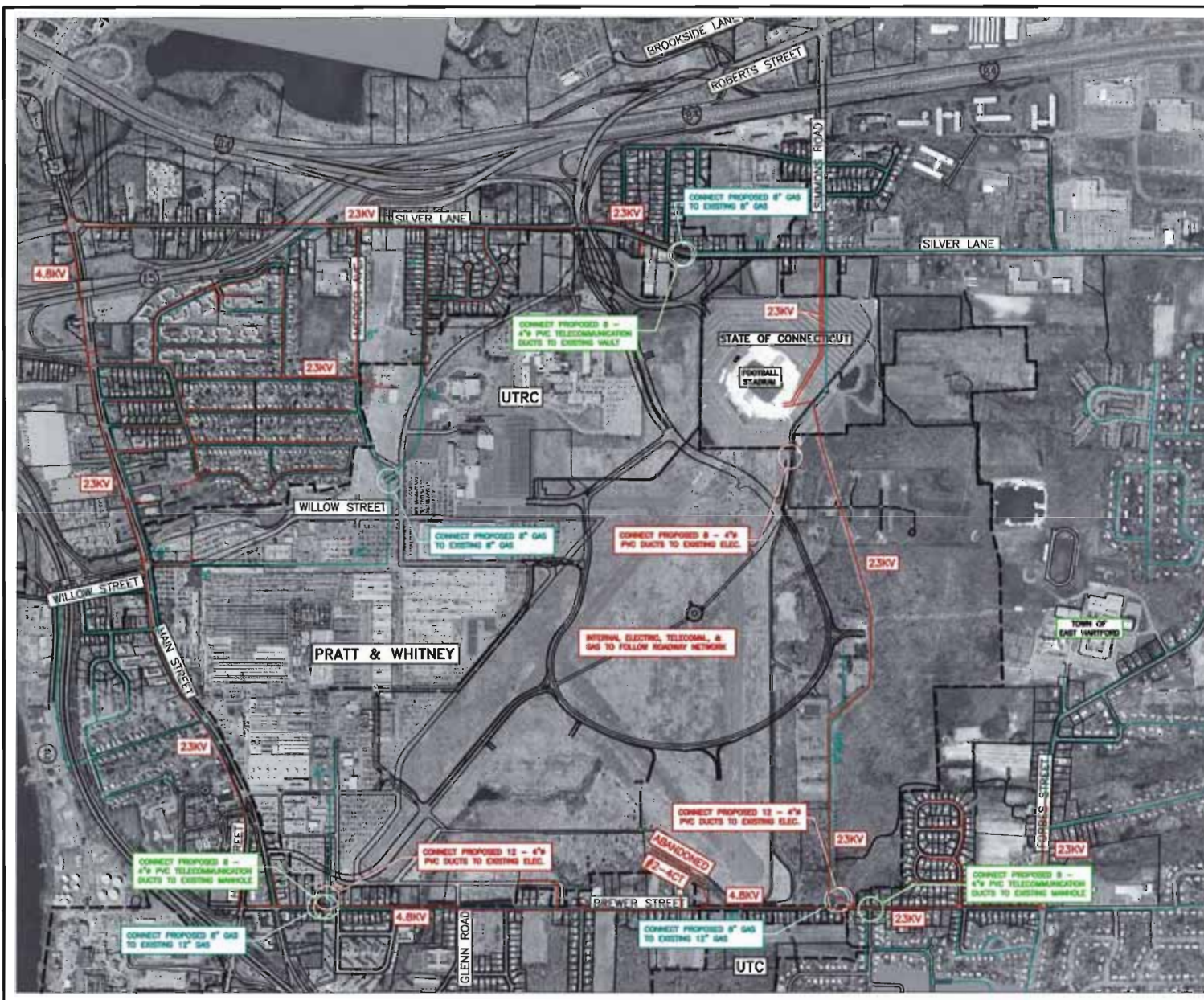
#### ***Cumulative Impacts***

Utilities will be relocated as needed, in consultation with the appropriate authorities. The need for, and locations of, relocations will be evaluated during the design phase. All precautions will be taken to limit service interruptions to local homes and businesses.

It is expected that electric, telecommunications, and natural gas will be supplied to the development without the need for significant upgrades to the existing supply systems. New lines will be extended into the site to provide service.

#### ***Mitigation***

"Call-Before-You-Dig" will be contacted prior to excavation during construction activities to locate all underground utilities and prevent interruption of service to the area.



# LEGEND

- UTC PROPERTY BOUNDARY
- OTHER PROPERTY BOUNDARY (MDC)
- EXISTING ELECTRIC UTILITIES
- EXISTING GAS UTILITIES

PROPOSED CONNECTIONS FROM TMG, 2005.

AERIAL PHOTO (SBC, 2002 AND COL-EAST, 2005)

**INFRASTRUCTURE IMPROVEMENT/  
RENTSCHLER FIELD DEVELOPMENT  
ENVIRONMENTAL IMPACT EVALUATION  
EAST HARTFORD, CT**

SCALE  
1" = 1000'  
DATE  
AUGUST 2006

**FIGURE 3.1.5-4**  
**EXISTING & PROPOSED ELECTRIC, TELE-  
COMMUNICATIONS, & NATURAL GAS UTILITIES**

### **3.1.5.5     Energy**

#### ***Existing Conditions***

Energy is consumed to operate street lighting and traffic signals at the Roberts Street/Silver Lane intersection, the Route 2/Brewer Street/Main Street/High Street area, and other intersections and roadways around Rentschler Field.

Energy consumption at the Stadium is principally limited to events. There is also energy consumption in the surrounding area associated with Pratt & Whitney/ UTC. The undeveloped portion of Rentschler Field does not contain any lighting or other amenities which would consume energy. Natural gas is supplied to the area by CNG, while electricity is supplied by CL&P.

The Stadium was designed using energy conservation strategies to create an energy efficient complex. The major energy uses associated with the Stadium include heating and cooling systems, sound systems, lighting, mechanical systems, and hot water. Natural gas is supplied to the Stadium for heating, hot water, and concession cooking. Electricity is used to power the Stadium ventilating and cooling systems, all other mechanical equipment such as elevators, television and radio broadcast equipment, and lighting and sound systems including power for special events. An emergency power generator is available to provide power for emergency lighting, elevators, fire alarm system, fire pump, building security systems, communications systems, and certain broadcast radio and television loads. The fuel source is diesel and the generator is tested monthly.

#### ***Transportation Impacts***

Impacts to energy use resulting from infrastructure improvements at the Roberts Street/Silver Lane intersection, the Route 2/Brewer Street/Main Street/High Street area, the I-84 ramps, the Main Street/Willow Street intersection, the Silver Lane/Forbes Street intersection, the Silver Lane mainline, the Main Street/ Silver Lane intersection, Simmons Road, and the access to EHGEMS are expected to be minimal. Energy will be consumed for the construction of the improvements, and by vehicles using the roadway system. The infrastructure improvements will improve traffic flow, which will allow vehicles to operate under improved fuel efficiency, consuming less energy overall.

Lighting and traffic signals may be replaced or moved within the various areas of improvements. Should any additional lighting or traffic signals be required, it is likely that using newer, more energy efficient fixtures and models will offset any increases in energy use that would occur by having more energy-consuming devices in the areas of infrastructure improvements.

#### ***Site Development Impacts***

Energy will be required to operate heating and cooling systems, sound systems, lighting, mechanical systems, hot water, appliances, and more for buildings within the proposed development. The total energy consumption of a building is dependent on the building use, building size, type of energy used, building age, and age of energy demanding equipment. Estimates of energy intensities for various commercial and residential facilities are available through the US Department of Energy and are presented in the following table.

**Table 3.1.5-4. Buildings Energy Intensities by Building Characteristic, 1999.**

| <b>Principle Building Activity</b>                 | <b>Sum of Major Fuel Consumption,<br/>1000 Btu/sf/year</b> |
|--|--|
| Food Sales   | 202.2  |
| Food Service                                       | 241.2  |
| Health Care  | 176.4  |
| Health Care - Inpatient                            | 228.9  |
| Health Care - Outpatient                           | 83.3   |
| Public Assembly                                    | 81.7   |
| Public Order and Safety                            | 86.9   |
| Religious Worship                                  | 32.2   |
| Service  | 124.4  |
| Mercantile   | 69.6   |
| Retail (other than mall)                           | 72.1   |
| Enclosed and Strip Malls                           | 67.5   |
| Office   | 90.5   |
| Education  | 75.0   |
| Lodging  | 99.5   |
| Warehouse and Storage                              | 44.0   |
| Other  | 144.0  |
| Vacant   | 16.0   |
| Apartments in Buildings with 5+ units, 2 bedrooms  | 46.8   |
| Apartments in Buildings with 5+ units, 3+ bedrooms | 46.5   |

Source: US Department of Energy/ Energy Information Administration

Based on the rates in Table 3.1.5-5, it is estimated that the development, including the EHGEMS, will result in total energy consumption of 495± billion BTU (495,000 million BTU) per year.

The developer provided estimates of annual energy consumption per land use type broken down into electrical usage and natural gas usage. These estimates are presented in the following table.

**Table 3.1.5-5. Developer Estimated Energy Consumption.**

| <b>Annual Electrical<br/>Usage<br/>(MMBTU*)</b> | <b>Annual Natural Gas<br/>Usage<br/>(MMBTU*)</b> | <b>Total Energy<br/>Consumption<br/>(MMBTU*)</b> |
|---|--|--|
| 345,000   | 302,000  | 647,000  |

MMBTU\* = one million BTUs

The estimates from the developer are higher than those predicted using the building energy intensities in Table 3.1.5-5. However, both estimates are of the same order of magnitude and provide a reasonable estimated range of potential energy usage.

It is expected that CNG will be able to serve the development without the need for upgrades to the existing system (Paul Querfeld, CNG; Pers. Comm.; July, 2005).

CL&P has existing capacity adequate to service the proposed site development (TMG, 2005).

### ***Cumulative Impacts***

Energy will be consumed for construction of the transportation infrastructure improvements and site development. There will be a slight offset in energy consumption due to the decrease in gasoline usage resulting from improved traffic flow.

### ***Mitigation***

The project will conform to current “standard practice” technologies and all State code requirements including the 2003 International Energy Conservation Code, CABO Model Energy Code and ASHRAE 90.1.

### **3.1.6 Contaminated Materials**

As part of this EIE, Metcalf and Eddy, Inc. completed a Corridor Land Use Evaluation on portions of roadways surrounding the proposed Rentschler Field development project where construction of the transportation improvements is anticipated. The Corridor Land Use Evaluation followed an approach similar to the DOT Corridor Land Use Evaluation (Task 110) typically used by the DOT to "determine the relative environmental risk associated with land uses in the vicinity of transportation projects". In addition to the Corridor Land Use Evaluation, Metcalf and Eddy, Inc. completed a Phase I Environmental Site Assessment (ESA) of the approximate 650 acre, undeveloped, contiguous parcel which comprises Rentschler Field. Potential Stadium parking areas were evaluated in a separate report, titled *Environmental Evaluation – Stadium Parking Rentschler Field Redevelopment Project: East Hartford, Connecticut*. The Phase I ESA, Corridor Land Use Evaluation Report and the *Environmental Evaluation – Stadium Parking Rentschler Field Redevelopment Project* report are included in Appendices G, H and I, respectively.

The approximate 650 acre parcel is owned by UTC, is located east of the active Pratt & Whitney facility at 400 Main Street, and consists of primarily, the former Rentschler Airfield.

Figure 3.1.6-1 depicts the areas of Recognized Environmental Condition (REC) within Rentschler Field as well as properties along the transportation corridors that have been judged to be of moderate or high risk for environmental contamination. The REC areas within Rentschler Field were assigned by UTC and its consultants during their site investigation conducted over the past several decades. The transportation corridors were divided into study area "cells" and the properties within each cell were assigned numbers.

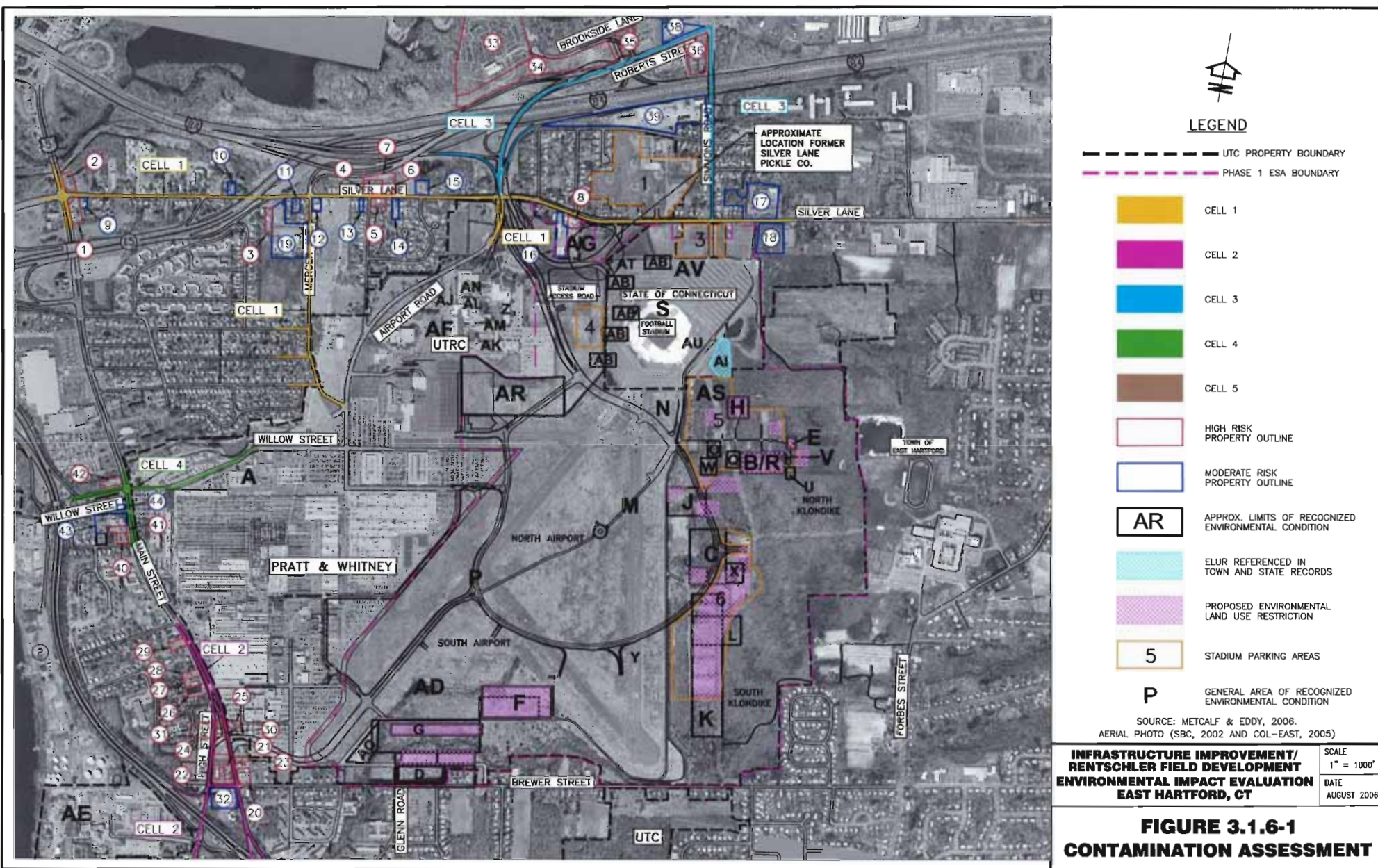
#### **3.1.6.1 Existing Conditions**

##### ***Roberts Street/Silver Lane Intersection***

In general accordance with the DOT Corridor Land Use Evaluation procedure and including an inspection (from public areas) of the parcels in the Roberts Street and Silver Lane Intersection, a review of historical data (city directories, aerial photographs and Sanborn Maps), and an electronic database review of state and federal environmental records, the existing and past land uses in this area consist of residential and open space, landscaped areas bordering the entrance to Airport Road. This area consists of approximately four to six parcels which have remained residential or undeveloped since the 1940's and are considered "low risk". There are no moderate or high risk properties within the impact area of the proposed Roberts Street/Silver Lane intersection. Refer to the Metcalf and Eddy *Corridor Land Use Evaluation Report* (Appendix H) for additional information.

##### ***Route 2/Brewer/Main/High Street***

In general accordance with the DOT Corridor Land Use Evaluation procedure, and including an inspection (from public areas) of the parcels at the intersection of Route 2/Brewer Street/Main Street/High Street (including Main Street, north to near Ensign Street, and south to Carter Street), a review of historical data (city directories, aerial photographs and Sanborn Maps), and an electronic database review of state and federal environmental records, the existing and past land uses in this area are considered a mixture of low, moderate and high risk. This area consists of approximately 60 parcels, the majority of which are low risk, such as residential, restaurants and



miscellaneous small businesses. With the exception of one moderate risk parcel at 281-287 Main Street (also referred to as 22 High Street or site #32 in Figure 3.1.6-1), all of the parcels south of Brewer Street have remained low risk since 1941. A total of 17 high risk properties were identified north of Brewer Street. These sites are summarized below and shown in Figure 3.1.6-1.

#### High Risk

- Site #20 Existing Gibbs gasoline station at 302 Main Street has remained a gasoline station since the 1940's.
- Site #21 Unknown business, listed in the CTDEP Voluntary Remediation Program database, located at 303 Main Street, which corresponds to the present-day Wendy's restaurant.
- Site #22 Former dry cleaners at 309-315 Main Street and 46 High Street since the 1950's, which are associated with a former "strip mall", located at the present-day Wendy's restaurant.
- Site #23 Former and existing dry cleaner at 310 Main Street, since the 1960's.
- Site #24 Former furniture company at 317 Main Street, listed in 1956.
- Site #25 Existing and former automotive repair, auto body, and service facilities at 328-330 Main Street, since the 1950's.
- Site #26 Existing and former automotive repair and service facility at 339-341 Main Street, since the 1950's.
- Site #27 Existing automotive repair and service facility at 345 Main Street, since the 1990's.
- Site #28 Existing trucking company at 349 Main Street, since the 1940's.
- Site #29 Existing and former gasoline station and oil company at 355-359 Main Street, since the 1940's.
- Site #30 Existing gasoline station at 24 High Street, since the 1960's.
- Site #31 Tobacco grower, listed for 31 High Street (west side of Main Street) in 1948.

Refer to the Metcalf and Eddy *Corridor Land Use Evaluation Report* (Appendix H) for additional information.

#### ***I-84 Ramps***

In general accordance with the Corridor Land Use Evaluation procedure, and including an inspection of the Roberts Street/I-84 northbound on-ramp and off-ramp locations, the Simmons Road/Roberts Street Intersection and Roberts Road to Silver Lane, a review of historical data (city directories, aerial photographs and Sanborn Maps), and an electronic database review of state and federal environmental records, the existing and past land uses in these areas vary from low to high risk.

*I-84 Ramps:* The areas specific to the I-84 ramps are considered low risk. No information reviewed indicated the presence of moderate or high risk land use activities in these areas.

*Simmons Road/Roberts Street Intersection:* At the intersection of Simmons Road and Roberts Street, one high risk and two moderate risk properties were identified. This area consists of approximately five properties.

#### High Risk

- Site #36 Former gun parts and aircraft component manufacturers at 333 Roberts Street (presently Days Inn property), from 1964-1982.

#### Moderate Risk

- Site #37 Existing professional office building at 290 Roberts Street, since 2001.
- Site #38 Existing professional office building at 330 Roberts Street, since 2001.

*Roberts Street (including present Brookside Lane):* The existing and past land uses in this area consist of low and high risk parcels. This area consists of approximately six parcels, three of which are considered high risk. No moderate risk parcels were identified in this area.

#### High Risk

- Site #33 Existing and former equipment (junkyard) and construction company at 101 Brookside Lane (also referred to as 490 Roberts Street in 1964-1982), since 1964.
- Site #35 Former gasoline station at 400 Roberts Street, from 1970-1990.
- Site #34 Former gasoline station, autobody, automobile service, trucking and machine manufacturer at 430-478 Roberts Street (presently DOT construction staging parcel, located between Brookside Lane and Roberts Street) from 1964-1984.

Refer to the Metcalf and Eddy *Corridor Land Use Evaluation Report* (Appendix H) for additional information.

#### ***Main Street/Willow Street Intersection***

In general accordance with the DOT Corridor Land Use Evaluation procedure, and including an inspection (from public areas) of the parcels at the intersection of Main Street, Willow Street and Willow Street Extension, a review of historical data (city directories, aerial photographs and Sanborn Maps), and an electronic database review of state and federal environmental records, the existing and past land uses in this area are predominately low risk. This area consists of approximately 17 parcels, the majority of which are residential, parking/roadway and landscaped areas associated with the Pratt & Whitney facility, located at 400 Main Street. Access to Willow Street, approximately 1,000 feet east of Main Street, was restricted and could not be inspected. This area is currently undergoing active PCB remediation with two phases completed to reduce any potential environmental risk. A total of three high risk and two moderate risk properties were identified.

#### High Risk

- Site #40 Former automobile repair and service facility at 409 Main Street, since the 1960's.
- Site #41 Former automobile parts and service facility at 411 Main Street, since the 1970's.
- Site #42 Existing and former gasoline station and automobile service facility at 431 Main Street, since the 1990's.

#### Moderate Risk

- Site #44 Former professional office building at 419 Main Street, since the 1950s.
- Site #43 Existing and former credit union (bank) and tire store at 417 Main Street, since the 1950's.

Refer to the Metcalf and Eddy *Corridor Land Use Evaluation Report* (Appendix H) for additional information.

#### ***Silver Lane***

In general accordance with the DOT Corridor Land Use Evaluation procedures, and including an inspection (from public areas) of the parcels along Silver Lane (from Main Street, west to

approximately 1,100 feet east of Simmons Road), a review of historical data (city directories, aerial photographs and Sanborn Maps), and an electronic database review of state and federal environmental records, the existing and past land uses in this area are considered predominately “low risk”. This area consists of approximately 130 parcels, the majority of which have remained residential since the 1940’s. A total of 17 properties, however, are considered “moderate risk” to “high risk”, with six of those properties listed as high risk. High risk properties consist of existing and former gasoline stations, dry cleaning establishments, and automobile wrecking and repair service facilities. Moderate risk properties include land uses such as professional office buildings and schools.

#### High Risk

- Site #3 Existing and former automobile repair and service facility at 193-195 Silver Lane, since the 1940’s.
- Site #4 Former dry cleaners at 288 Silver Lane, from 1956-1977.
- Site #5 Existing and former gasoline station at 291-295 Silver Lane, since the 1950’s.
- Site #6 Former gasoline station and automobile repair and service facility at 306 Silver Lane, since the 1950’s.
- Site #7 Former automobile parts and wrecking facility at 310 Silver Lane, from 1941-1956.
- Site #8 Existing and former gasoline station at 483-499 Silver Lane, since the 1970’s.

#### Moderate Risk

- Site #9 Professional office building at 17-21 Silver Lane, since 2001.
- Site #10 Nursery school and child daycare facility at 158 Silver Lane, since the 1960’s.
- Site #11 Professional office building at 219 Silver Lane, since the 1970’s.
- Site #12 Former furniture refinisher at 241 Silver Lane in 1941.
- Site #13 Former appliance/equipment repair businesses at 281 Silver Lane, in 1996.
- Site #14 Equipment repair businesses at 315 Silver Lane, from 1974-1982.
- Site #N/A Equipment rental center at 316 Silver Lane in 1990 (address not located on Figure 3.1.6-1).
- Site #15 Existing animal medical clinic at 334 Silver Lane, from 1996-2006.
- Site #16 Existing professional office building at 467-469 Silver Lane, in 2006.
- Site #17 Existing child daycare facility at 656 Silver Lane, in 2006.
- Site #18 Existing medical clinic at 677 Silver Lane, in 2006.

Refer to the Metcalf and Eddy *Corridor Land Use Evaluation Report* (Appendix H) for additional information.

#### **Access to EHGEMS**

This area is considered low risk for soil or groundwater contamination. Historical land uses include woodland and/or farmland, residential, and the front lawn and parking areas of EHHS and CIBA.

#### **Rentschler Field**

The Phase I ESA included Rentschler Stadium, the former Pratt & Whitney airport runway, a wooded area to the east of the former runway (Klondike), undeveloped lands to the east and south of the active UTRC facility, and an unattached parcel located on the northwest side of Airport Road. Collectively, these areas comprise approximately 633 acres.

Approximately thirty-five Recognizable Environmental Conditions (RECs) were identified during completion of this assessment. Some identified RECs have not been investigated while others have been investigated and/or remediated to various degrees. RECs identified include:

- Former underground storage tanks (USTs) and above ground storage tanks (ASTs) containing petroleum products and/or hazardous materials (including the former Silver Lane Pickle Company),
- Former chemical, explosives, and other hazardous and/or regulated materials storage areas (interior and exterior),
- Former septic systems and drywells,
- Former contaminated soil piles and debris/rubble piles,
- Former fire training and aircraft engine testing operations,
- Former and current wastewater discharge outfalls, and
- Discharges of petroleum products and/or hazardous materials to surface water bodies on the site.

All thirty-five RECs are listed in Table 3.1.6-1 and plotted on Figure 3.1.6-1.

In general, the Phase I ESA identified potential environmental impacts at each REC that likely will require additional investigation and remediation. However, it is not possible to determine the specific requirements for further investigation/remediation at each REC due to a variety of factors. Investigation and remediation work has been performed by others at many of these RECs, but the current status of the environmental work at each REC is unknown. Much of this work was performed in the 1990s and regulatory requirements may have changed since then. Furthermore, the specific requirements for investigation and remediation of each REC depend not only on regulatory requirements but also on the intended future use of the area (parking area, occupied building, open space, residential versus commercial use, etc.). Therefore, although the Phase I ESA is instrumental in identifying RECs, additional efforts beyond this level of assessment are necessary to determine specific further actions required for each REC.

Several ELURs have been proposed for eastern and southern portions of the site. These are shown on Figure 3.1.6-1 and are presented in Table 3.1.6-1 (ID "T"). An ELUR is a binding agreement between a property owner and the Commissioner of the DEP which is recorded on the municipal land records. The purpose of an ELUR is to minimize the risk of human exposure to pollutants and hazards to the environment by preventing specific uses or activities at a property or a portion of a property. The ELUR may either restrict the use and activity of an entire property to industrial and commercial use, allowing remediation to be completed to the industrial commercial criteria, or result in specific restrictions that prevent the disturbance of inaccessible soil, the demolition of buildings which render soil environmentally isolated, the disturbance of an engineered control or the underlying polluted soil, the construction of a building over groundwater that exceeds the volatilization criteria for groundwater, and the use of groundwater for drinking or other domestic purposes at sites where it is impracticable to remediate groundwater. Because the ELUR is recorded on the land records, the requirements of the ELUR are binding on the present and future owners and occupants of the property unless a release from the ELUR is approved by the DEP.

The environmental conditions of the proposed Stadium parking areas were summarized based on the information gathered in support of the *Phase I Environmental Site Assessment* for Rentschler Field (M&E, 2006c). Available information was reviewed to determine if Areas of Environmental

Concern (AOCs) exist within proposed Stadium parking areas. Table 3.1.6-2 presents the Stadium parking areas and the AOCs present within each. More detailed information may be found in Appendix I.

**Table 3.1.6-1. Rentschler Field Phase 1 Environmental Site Assessment Summary**

| <b><i>Rentschler Field Stadium and North Airport</i></b> |   |   |                   |  |
|--|---|---|-------------------|--|
| <b>ID</b>  | <b>REC</b>                                  | <b>Nature of Finding</b>  | <b>COCs</b>       | <b>Status as Indicated by Others*</b>                                |
| M  | Leaking UST                                 | 615 Silver Lane - EDR Indicates UST reported as Leaking UST due to "PCBs in soil"   | PCBs              | LUST status unknown  |
| N  | Registered Former USTs                      | EDR/CT DEP UST Registration form indicates 10 historical USTs (removed by 1985) 9 gasoline (150-15,000 gallons), 1 "hazardous substance" (solvents) closed in place   | VOCs, TPH, Lead   | Tanks closed and/or removed - closure details not available          |
| P  | Rentschler Airport Runway Area              | Take-off and landing only, maintenance was done elsewhere, from ~1931 to ~1994.   | none              | No evidence of release determined by LEA - NFA                       |
| S  | Stadium Property - Historic Dumping         | EDR report - SDADB database due to spill/dump of non-chlorinated VOCs, TPH, and metals  | VOCs, TPH, Metals | Stadium property redeveloped - SDADB status is open                  |
| Y  | Possible Former Target Berm                 | Reported in "North Airport" (area of stadium) according to ACOE, berm no longer exists, located under current N/S runway  | metals            | Unknown  |
| AB   | Former Army Barracks/Septic Systems         | ACOE indicated possible use of septic tanks and leach fields, locations unknown   | VOCs, TPH, other  | Status of septic systems unknown at time of report (1999)            |
|  |   | CT DEP Files - Letter (2000) from Marin Environmental to CT Office of Planning and Management regarding former septic systems   | VOCs, TPH, other  | Septic leach fields were identified but not investigated.            |
|  |   | During Marin Environmental's July 2000 soil and groundwater investigation, 5 septic systems located within the stadium area were located and sampled  | VOCs, TPH, other  | No exceedances of soil quality standards were identified             |
| AG   | Former Silver Lane Pickle Company           | According to 2000 CT DEP and Marin Environmental correspondence, exceedances of soil and groundwater criteria "have been noted" in area. Area surrounding Willow Brook needs to be evaluated for groundwater impacts. | VOCs, TPH, Metals | Unknown  |
|  |   | Per Marin Environmental Soil and Groundwater Characterization report, soil on this portion of the property was remediated to RSR standards  | VOCs, TPH, metals | Remediated - Groundwater monitoring recommended                      |
| AI   | Press Parking Area - PCB/Lead Contamination | As of 2002, an ELUR was already in place for this area. Lead and PCBs were discovered in discrete patches in this area.   | Lead, PCBs        | Area remediated to Res DEC and GB PMC, confirmation samples provided |

**Table 3.1.6-1 continued. Rentschler Field Phase 1 Environmental Site Assessment Summary**

| <b>ID</b>            | <b>REC</b>  | <b>Nature of Finding</b>   | <b>COCs</b>                    | <b>Status as Indicated by Others*</b>   |
|----------------------|---|--|--------------------------------|---|
| AT                   | Southeast corner of Former Silver Lane Pickle Company | Monitoring Well WB-1 - Groundwater in exceedance of Hg Aquatic Life Criteria   | Hg                             | No groundwater results since 2000 were reviewed   |
| AV                   | Soil northeast of stadium                             | Marin Environmental Soil and Groundwater Characterization July 2000 - soil sample SSWL-1 (north portion of stadium property)   | 4,4'-DDT                       | No exceedances of Res DEC or I/C DEC. Expected to be an aberration.   |
| AU                   | Groundwater southeast of stadium                      | Groundwater in exceedance of Hg, Cu and Pb Aquatic Life Criteria   | Hg, Cu, Pb                     | No groundwater results since 2000 were reviewed   |
| <b>South Airport</b> |   |  |                                |   |
| <b>ID</b>            | <b>REC</b>  | <b>Nature of Finding</b>   | <b>COCs</b>                    | <b>Status as Indicated by Others*</b>   |
| D                    | Former RCRA Storage                                   | RCRA Former Storage Area. Unpaved lot, soil from 1989 North Tank Farm UST removal was stockpiled here; DEP RCRA Files indicate storage of hazardous waste in piles with out proper liners or leachate system | VOCs, SVOCs, TPH, PCBs, Metals | 22 CY of soil excavated in 1999 - NFA   |
| F                    | Former Fire Training Area B                           | Unpaved area, contained 40' diameter temporary pond & mock fuselage for training activities. Pond was filled with flammable liquids during training.   | SVOCs, TPH, PCBs               | 282 CY of soil excavated - ELUR proposed; Dioxin investigation indicated remediation appears to be incomplete |
| G                    | Fill Area   | Various debris buried and scattered in this area, including asphalt, brick, concrete, and clay tile pipe.  | Lead, SVOCs                    | 134 CY of soil excavated - ELUR proposed  |
| I                    | Former Contractor Storage Area                        | Storage of equipment, fuels, paints, and cleaning fluids from 1970 to (at least) 1998; apparently built partially on fill of unknown origin.   | TPH, VOCs, SVOCs, Metals       | 60 CY of soil excavated - ELUR proposed   |
| AD                   | Pewter Pot Brook                                      | CT Spills reported in 1997, jet fuel discharged from broken pipe on Main St P&W facility; most fuel recovered, but ~300 gallons discharged to Pewter Pot Brook and not recovered                             | VOCs, TPH                      | Unknown   |
| AO                   | Former Tank Trailer Storage Area                      | Storage of equipment (engines, engine stands), empty box trailers and bulk liquid tank trailers, which were used to transport hazardous waste and fuels  | VOCs, TPH, metals (lead)       | All suspected contaminated soil excavated - No ELUR required  |

**Table 3.1.6-1 continued. Rentschler Field Phase 1 Environmental Site Assessment Summary**

| <b>North Klondike</b> |  |  |                          |   |
|-----------------------|--|--|--------------------------|---|
| <b>ID</b>             | <b>REC</b>                                       | <b>Nature of Finding</b>   | <b>COCs</b>              | <b>Status as Indicated by Others*</b>                                       |
| B/R                   | Former Test Stand X-194 (also known as X-448)    | ~2-acre area, partially paved, used for testing of rocket motors using beryllium or aluminum powder/fuel, some recorded spills; operated from ~1963 to ~1970 | PCBs, VOCs, TPH, metals  | Excavation of 550 CY of soil, sediment, and concrete in 1995; ELUR proposed |
| C                     | Former Fire Training A & B-24 Test Stand Areas   | Former location of USTs and ASTs; use of flammable and other hazardous materials   | VOCs, SVOCs, TPH, Metals | 1.) A area - PS/ NFA<br>2.) B24 area - NFA<br>3.) USTs/ASTs - Proposed ELUR |
| E                     | Former Explosives Storage Building               | Building used for storage from ~1957 to 1993; materials stored included hydrazine, pentaborane, and nitrogen peroxide  | Metals, VOCs, TPH        | PS; proposed ELUR   |
| H                     | Former X-407 PCB Storage Area                    | Concrete-floored building used for storage and transport, building at least partially washed/scabbed during closure & all equipment removed.                 | Metals, VOCs, TPH, PCBs  | 122 CY of soil excavated - Proposed ELUR                                    |
| J                     | Former X-312 Tank Farm; X-314 Area               | 5 steel USTs storing fuel, primarily jet, for test stands; operated from ~1957 to 1992   | VOCs, TPH, Lead          | 25 CY of soil excavated - Proposed ELUR                                     |
| O                     | Former Fire Training Area D                      | Pit filled with water and flammable/combustible materials and ignited for fire training  | VOCs                     | No evidence of release determined by LEA - NFA                              |
| Q                     | X-410 Former Oil Storage Rack                    | Storage of containerized oil on an outside rack from ~1965 to ~1983.   | VOCs, TPH                | PS - NFA  |
| U                     | Former Chemical and Explosives Storage Buildings | Operated from ~1957 to 1993, storage of acids, bases, cleaning solvents and explosives   | VOCs, metals             | PS - NFA  |
| V                     | Former Outside Chemical Storage Shed             | Demolished shed in 1993 - formerly used to store acids, bases, and cleaning solvents   | VOCs, metals             | PS - NFA  |
| W                     | Former MERL                                      | Suspected dry well - no operations information or records available  | VOCs, SVOCs, TPH, metals | PS - NFA  |
| X                     | Former Small Arms Firing Range                   | Small Arms Firing Range  | metals                   | PS - NFA  |
| AS                    | Unknown Mounded Area                             | Two mounding areas and parking lot sweepings area  | unknown                  | Not tested  |

**Table 3.1.6-1 continued. Rentschler Field Phase 1 Environmental Site Assessment Summary**

| <b>South Klondike</b>            |   |  |  |   |
|----------------------------------|---|--|--|---|
| <b>ID</b>                        | <b>REC</b>  | <b>Nature of Finding</b>   | <b>COCs</b>  | <b>Status as Indicated by Others*</b>   |
| K                                | Former Virgin Products Storage Area and Storage Areas 1 through 6 | Storage of metal parts and containers/drums of unknown contents from ~1960 to 1993   | VOCs, PCBs   | SVE (1994); soil excavation and treatment (1997); additional excavation planned (status unknown); ELUR proposed in portions |
| L                                | Former X-307  | X-307 Rubble Piles - storage of piles including concrete block, brick, asphalt, and metal pipe from mid-1970s to "present" (at least 1998)                                 | VOCs, SVOCs, TPH, metals                                   | No evidence of a release determined by LEA - NFA  |
| <b>Other Areas/Unknown Areas</b> |   |  |  |   |
| <b>ID</b>                        | <b>REC</b>  | <b>Nature of Finding</b>   | <b>COCs</b>  | <b>Status as Indicated by Others*</b>   |
| AP**                             | Tractor Trailer Roll over and Spill                               | In 1992, a release of 300-400 gallons of diethylene triamine, ammonium chloride, and sodium nitrate was released on an asphalt road on the P&W property (location unknown) | Diethylene Triamine, Ammonium Chloride, and Sodium Nitrate | Spill neutralized with Sodium Bicarbonate and drummed for disposal - Soil conditions not available                          |
| AR                               | Vacant Lot South of UTRC  | "Off-site" supplemental parking - no exceedances of soil quality standards found   | none   | No evidence of a release  |
| T***                             | Proposed ELURs (site wide)  | ELURs proposed for various parts of property   | PCB, VOCs, SVOCs, TPH, metals                              | No ELURs have been filed except for within the stadium area (Area AI)   |

**Notes:**

REC – Recognized Environmental Condition

COCs – Contaminants of Concern

UST – Underground Storage Tank

AST – Aboveground Storage Tank

PCBs – Polychlorinated Biphenyls

VOCs – Volatile Organic Compounds

SVOCs – Semi-volatile Organic Compounds

TPH – Total Petroleum Hydrocarbons

EDR – Environmental Data Resources

LEA – Loureiro Engineering Associates, Inc.

NFA – No Further Action (as recommended by LEA)

ELUR – Environmental Land Use Restriction

CY – Cubic Yards

ACOE – Army Corps of Engineers, Archives Search Report, September 1999

PS – Polluted Soil

RCRA – Resource Conservation and Recovery Act

UTRC – United Technologies Research Center

Res or I/C DEC – Residential or Industrial/Commercial Direct Exposure Criteria

GB PMC – Pollutant Mobility Criteria for GB groundwater areas

Information in this table compiled from LEA and Fuss & O'Neill documents.

\*The status and recommendations indicated in this column represent the conditions and opinions of others at the time of report completion.

\*\*Location unknown.

\*\*\*Areas with this designation are proposed ELUR areas as shown on a map entitled "Existing Conditions Plan", prepared by Fuss & O'Neill, dated March 2006.

**Table 3.1.6-2. Stadium Parking Areas Environmental Investigation Summary**

| Proposed Stadium Parking Area | Current Land Use  | Summary of Findings  | Recommendations  |
|-------------------------------|---|--|--|
| 1                             | Open space utilized for recreational activities.  | No AOCs were identified.   | Consider a limited subsurface investigation in the proposed parking area prior to construction to characterize the environmental quality of any affected media.                |
| 3                             | Mostly undeveloped, open field with paved access driveway for Stadium, occasional Stadium parking.  | No AOCs were identified.   | Consider a limited subsurface investigation in the proposed parking area prior to construction to characterize the environmental quality of any affected media.                |
| 4                             | Open space.   | No AOCs were identified.   | Consider a limited subsurface investigation in the proposed parking area prior to construction to characterize the environmental quality of any affected media.                |
| 5                             | North Klondike area, consisting of 9 specific Pratt & Whitney former work areas, which were utilized for (former) storage of chemicals, explosives & fuels, fire training & testing of rocket motors. | AOCs identified include:<br>1. Former test stand area (Sub-Area X-401);<br>2. Former PCB storage building area (Sub-Area X-407);<br>3. Former oil storage rack (Sub-Area X-410);<br>4. Former test stand areas (Sub-Areas X-415 & X-430);<br>5. Eastern portion of tank farm (Sub-Area X-312/X-314);<br>6. Former test stand X-194;<br>7. Explosives storage area;<br>8. Materials Experimental Research Laboratory (MERL); and<br>9. North Klondike Undeveloped Land Area, north of X-401 Sub-Area. | Prepare a comprehensive, up-to-date summary of all remedial activities conducted for this area. Additional investigation and/or remediation may be necessary within this area. |
| 6                             | South Klondike area, formerly containing buildings that were demolished by 1993.  | AOCs identified include:<br>1. Virgin products storage area (VPSA);<br>2. Quonset Hut and drum storage area;<br>3. Cryogenics area;<br>4. Linde Gas area;<br>5. Firing range area;<br>6. Tie down area; and<br>7. Sub-Area X-307.  | Prepare a comprehensive, up-to-date summary of all remedial activities conducted for this area. Additional investigation and/or remediation may be necessary within this area. |

**Notes:**

Source: Environmental Evaluation – Stadium Parking: Rentschler Field Redevelopment Project: East Hartford, Connecticut  
AOCs – Areas of Environmental Concern

For additional information, refer to the Metcalf and Eddy *Phase I ESA Report* and *Environmental Evaluation – Stadium Parking: Rentschler Field Redevelopment Project* report (Appendices G and I).

### **3.1.6.2     Transportation Impacts**

#### ***Roberts Street/Silver Lane Intersection***

There are no properties within the Roberts Street/Silver Lane intersection with a moderate or high risk for contamination, according to the *Corridor Land Use Evaluation* conducted by Metcalf and Eddy, Inc. Therefore, the probability of encountering contamination during the construction of the Roberts Street/Silver Lane grade-separated interchange is low, and impacts are unlikely.

#### ***Route 2/Brewer/Main/High Street***

The improvements at the Route 2/Brewer/Main/High Streets area will involve construction within at least two high risk properties and adjacent to an additional three high risk properties. Significant construction will occur within high risk properties numbered 24 and 30 on Figures 3.1.6-1 and 1.2.1-8. Property #24 is the site of a former furniture company and property #30 is an existing gasoline station. Construction will occur adjacent to high risk properties #26, 27 and 28. There will be little construction directly within these properties, which contain an existing and former automotive repair and service facility and an existing trucking company. There is the potential for encountering contaminated soils or groundwater within or adjacent to these properties during construction.

#### ***I-84 Ramps***

Construction associated with the improvements to the I-84 westbound off-ramp to Roberts Street will occur within two high risk properties consisting of a former gasoline station (#35), and multiple land uses including a gasoline service station and autobody, equipment, tire, auto center and trucking uses (#34). Refer to Figures 3.1.6-1 and 1.2.1-7. There is the potential for encountering contaminated soils or groundwater within these properties during construction.

#### ***Main Street/Willow Street Intersection***

Improvements at this intersection will not impact existing moderate and high risk properties located nearby. It is likely that any contaminated groundwater potentially associated with these properties would migrate towards the Connecticut River, away from the construction areas. Therefore, the potential for encountering contaminated soils or groundwater during construction at the Main Street/Willow Street intersection is low.

#### ***Silver Lane***

Based on the Corridor Land Use Evaluation, there are seven (7) moderate risk properties and four (4) high risk properties along the portions of Silver Lane that will undergo improvements. Silver Lane is being widened and its alignment is being shifted slightly in some locations. One moderate risk property (#16), a professional office building, and one high risk property (#8), a gasoline station, are located across from Gold Street. Three moderate risk properties located near the intersection with Mercer Avenue are a public school (#19) and two professional office buildings (#11 and 12). Near the intersection with Whitney Street are two moderate risk properties and three high risk properties. The moderate risk properties are an appliance service store (#13) and a power equipment company (#14). The high risk properties are a cleaners (#4) and two gasoline stations (#5 and 6). An animal treatment facility, a moderate risk property (#15), is located across from Warren Drive. Refer to Figures 3.1.6-1, 1.2.1-2 and 1.2.1-5.

There is the potential for encountering contaminated soils or groundwater on or adjacent to these properties during construction.

### ***Access to EHGEMS***

This area is considered low risk for soil or groundwater contamination, thus impacts are not expected.

### ***3.1.6.3 Site Development Impacts***

#### ***Rentschler Field Master Plan Development***

The exact locations of buildings and structures associated with proposed site development for the Master Plan are not known at this time. In general, the proposed development area overlaps with sites of proposed ELURs and areas of RECs. Impacts will be minimized by appropriate additional investigations, remediation, and/or creation of ELURs, as discussed below in the Mitigation section.

#### ***Master Plan Internal Roadway***

The layout of the internal loop road passes through areas of proposed ELURs and general areas of RECs. ELURs may include one or more of the following: (1) the prohibition of residential activity, (2) the prohibition of removal of existing pavement, (3) the allowance of buildings or structures that render the soil inaccessible, (4) the prohibition of building construction and (5) the prevention of the use of groundwater. Construction of a paved roadway is unlikely to be prevented by the proposed ELURs. However, ELURs are site-specific and restrictions must be evaluated on a case by case basis. Impacts associated with RECs will be minimized by appropriate additional investigations, remediation, and/or creation of ELURs, as discussed below in the Mitigation section.

#### ***Stadium Parking Plan***

Stadium parking areas # 1 and 3 do not contain identified AOCs. Stadium parking area # 4 is adjacent to an area of REC, but does not contain identified AOCs. A portion of a former army barracks septic system has been identified as being located on the eastern-central border of parking area # 4. Trace concentrations of various metals were reported in soil samples taken from this vicinity; however, all concentrations were below applicable Remediation Standard Regulations (RSR) criteria.

Stadium parking areas # 5 and 6 overlap several areas of RECs and proposed ELURs. Stadium parking area # 5 contains nine (9) AOCs with documented soil and/or groundwater RSR exceedences and/or identified polluted soil. Some of these AOCs have experienced remedial activities. Stadium parking area # 6 contains seven (7) AOCs. There is the potential to contact contaminated soils and/or groundwater during construction of Stadium parking areas. Impacts associated with RECs and AOCs will be minimized by appropriate additional investigations, remediation, and/or creation of ELURs, as discussed below in the Mitigation section.

#### ***EHGEMS Building and Grounds***

The proposed location for the EHGEMS is not within any areas of proposed or existing ELURs or RECs. Thus, impacts are not expected.

### ***3.1.6.4 Cumulative Impacts***

There is the potential for encountering contaminated soil or groundwater during construction of the Route 2/Brewer/Main/High Streets intersection improvements, the improvements to the I-84 ramps, and the widening of Silver Lane, as well as during site development and construction of Stadium parking areas. Appropriate mitigation is described below.

#### **3.1.6.5 Mitigation**

The Metcalf and Eddy *Phase I ESA and Corridor Land Use Evaluation* identified a number of RECs on the Rentschler Field property and a number of surrounding moderate and high environmental risk land uses associated with the transportation improvements. The RECs and moderate and high risk properties have, or potentially may have, impacts to the environment in these locations.

Mitigation, as stated in the CEPA regulations (Section 22a-1a-7(F)), refers to measures related to repairing, rehabilitation or restoring the impacted environment, and compensating for the impact by replacing or providing substitute resources or environments. The Metcalf and Eddy *Phase I ESA and Corridor Land Use Evaluation* have identified a number of locations where releases or land uses have impacted the environment, necessitating the need for mitigation. In other locations, additional investigations are appropriate to evaluate whether the environment has been impacted and whether mitigation is necessary.

##### ***Route 2/Brewer/Main/High Street; I-84 Ramps; Silver Lane***

Additional investigation is recommended where related transportation improvements are planned in the vicinity of high and moderate risk land use properties. These investigation activities would include the collection and analysis of soil and/or groundwater samples to evaluate for the absence or presence and location of subsurface contamination, and to assess potential pollutant impacts to be encountered during construction. Contingent upon these investigation findings, additional activities may be necessary to establish an appropriate mitigation plan, which could include a material management plan to address special handling issues, as well as a health and safety plan to address health risks associated with handling contaminated soil and/or groundwater.

In locations where the environmental land use risk is considered low, additional investigations are not recommended.

##### ***Access to EHGEMS***

The proposed access drive to the new EHGEMS would traverse areas determined to have low risk for containing contamination, therefore no mitigation is warranted.

##### ***Rentschler Field Master Plan Development; Master Plan Internal Roadway***

In RECs where impacts have been documented, active mitigation is recommended. Active mitigation would consist of soil and/or groundwater remediation and possible ELURs to address the future risk associated with the environmental impact. To address potential short-term risks associated with construction activities in areas of environmental impacts, a material management plan and a health and safety plan (HASP) would be appropriate. These measures would address special material handling issues and health risks associated with handling contaminated soil and/or groundwater during construction. The type and degree of mitigation is contingent upon the proposed construction and locations of buildings and other permanent structures.

In RECs where either data gaps exist or impacts have not been documented, additional investigation would be appropriate to evaluate for the absence or presence and nature and extent of potential subsurface contamination, and to assess the potential pollutant impacts that may be encountered during construction. Additional investigations would include the collection and analysis of soil and/or groundwater samples.

In locations where RECs have not been identified, additional investigations are not recommended.

Development will comply with all existing ELURs and proposed ELURs will be resolved prior to development within those areas.

#### ***Stadium Parking Plan***

Although no AOCs were identified within Stadium parking areas # 1, 3 and 4, it may be appropriate to conduct a more rigorous level of pre-construction screening with a limited subsurface investigation within the proposed parking areas to characterize the environmental quality of soil and/or groundwater. This information would be used to assess the environmental liability relating to RSR compliance issues, establish necessary special material handling requirements, and evaluate the potential risks associated with anticipated exposure to contaminated soil and/or groundwater (Metcalf and Eddy, Inc., 2006c). The degree and extent of contamination in Stadium parking areas # 5 and 6 should be established, using an up-to-date summary of all remedial activities conducted within these areas, as well as additional investigations as needed.

#### ***EHGEMS Building and Grounds***

No existing or proposed ELURs or RECs are present within this location, thus mitigation is not applicable.

For additional information, refer to the *M&E Phase I ESA, Corridor Land Use Evaluation Report*, and the *Environmental Evaluation – Stadium Parking Rentschler Field Redevelopment Project* report (Appendices G, H and I).

### **3.1.7 Solid Wastes and Recycling**

#### **3.1.7.1 Existing Conditions**

The Waste Services Division of the East Hartford Public Works Department is responsible for weekly collection of residential solid waste and curbside recycling from buildings containing six or fewer dwelling units and Town-owned buildings, not including schools, as well as the operation of the Town transfer station. The Public Works Department collects approximately 18,000 tons of municipal solid waste annually. In addition, the Town disposes of about 3,000 tons of bulky waste annually, some of which is collected curbside and some of which is brought to the Town transfer station by residents. The Town contracts for curbside recycling service. Items collected are newspaper, magazines and catalogs, corrugated cardboard, metal and glass food containers, and #1 and #2 plastic. Annual tonnage collected curbside is approximately 2,400 tons. The Town transfer station accepts non-commercially generated waste oil, tires, brush, leaves, appliances and scrap metal. Businesses and industries within the Town are not eligible to use the Town transfer station and must contract privately to have their trash, bulky waste, and recyclables disposed of (Bill Taylor, EHDPW; Pers. Comm.; June, 2005).

East Hartford is a member town of the Mid-Connecticut Project of the Connecticut Resources Recovery Authority (CRRRA). The Mid-Connecticut Project consists of a 2,850 ton-per-day refuse-derived fuel trash-to-energy facility located in Hartford, four transfer stations, the Hartford landfill, a regional recycling center and the CRRRA Visitors Center & Trash Museum in Hartford. The Mid-Connecticut Project receives and processes approximately 880,000 tons of solid waste per year (CRRRA, 2004). The Mid-Connecticut Project services 69 other towns and cities. The Mid-Connecticut Project is the ultimate receptor of most waste disposed from East Hartford.

The only solid waste generator currently onsite is the Stadium. Solid waste generation at the Stadium occurs largely on event days. Containers with a capacity of 6 cubic yards have been placed at convenient intervals in the parking lots and grass picnic areas ("tailgate areas"). Waste containers are also located at strategic locations throughout the Stadium. Trash left on the ground in the tailgate areas is hand picked after events. After an event, trash in the Stadium seating area is blown down to the field level, where it is efficiently removed. Bottles and cans left on the ground are hand picked for recycling by non-profit groups and individuals who use the returned deposit money for fundraising. On site, two 35 cubic yard closed containers store the solid waste, until it is hauled away by Windsor Sanitation, a licensed solid waste contractor. The contractor takes the solid waste off-site to CRRRA's Mid-Connecticut Project waste-to-energy facility which uses trash to generate energy.

Windsor Sanitation records indicate that approximately 190 tons of trash were removed from the Stadium by the contractor between April and December of 2004. According to the Stadium operator, approximately 370 cubic yards of trash were generated during one of the most attended games.

The Stadium operator works with East Hartford officials to monitor complaints about litter and to respond appropriately to any such situations. According to the operator, the only complaints regarding litter or trash after Stadium events have been issued by Pratt & Whitney, as litter is sometimes transported by the wind in that direction. In those cases, complaints have been responded to timely and appropriately.

A subcontractor, Championship Turf, handles the maintenance of the playing field and grassed parking areas. The grass clippings that are generated remain on the ground to be recycled into the soil.

#### **3.1.7.2      Transportation Impacts**

Construction waste will be generated during construction of the transportation infrastructure improvements. This will include demolition waste and excavation spoils. The majority of these wastes may be classified as clean fill, as long as the areas have not been exposed to hazardous waste contamination. Clean fill is defined in Section 22a-209 RCSA as natural soil, rock, brick, ceramics, concrete, and asphalt paving fragments which are virtually inert and pose neither a fire threat nor a pollution threat to ground or surface water. Clean fill is exempt from solid waste regulations (DEP, 2002). Typically, clean fill is used on-site in roadway embankments or in other areas requiring fill. Standards set limits on the dimensions of the fill (pieces of pavement/concrete, etc.) that may be placed in specific locations of the embankment or below the roadway subbase. If all of the fill cannot be used on-site, it is either used as fill on another site or it must be hauled by the contractor to an approved disposal site.

Improvements to the transportation infrastructure are not expected to result in increased generation of solid wastes in the long term.

#### **3.1.7.3      Site Development Impacts**

During construction of the proposed development, certain waste materials will be generated. Some of these include demolition wastes from the removal of runways and roads, and excavation spoils, which may be classified as clean fill.

The runways are a combination of asphalt over sub-base fill material and asphalt over 15 inches of concrete over sub-base fill material. The nature and quantity of the asphalt and base course materials appear to be stable, well-graded mixtures of crushed stone and/or sand and gravel. These materials may be re-used on site. The pavement may be scarified off of the underlying cement or sub-base material and used as a base course for the proposed on-site roadways. The concrete may be broken up and used for structural fill, laydown areas or working mat areas. The roadways and slabs in the proposed Stadium parking areas will be recycled in a similar manner.

The surficial soils consist predominately of clean fine to medium sands without significant gravel content. The sands may be re-used on-site. These materials could be incorporated into structural embankments, if necessary, but are better suited for site fill applications or as backfill for basement foundation walls.

Varved silts and clays may be encountered in the lower portion of the construction excavations. The clay will be dewatered, if necessary, and possibly used as non-structural or landscaping fill. Another possible use for the clay is for off-site landfill cover material, brickmaking, or other non-structural fill applications. During the site investigation for construction of the Stadium, the varved clays in the area were found to contain naturally-occurring arsenic at low levels. Re-use or disposal of the varved clays will be closely coordinated with the DEP.

Solid waste generation at the proposed development will occur steadily throughout the year, with more waste being generated Monday through Friday. Solid waste generation rates compiled for various sources by the California Integrated Waste Management Board were used to estimate solid waste generation of the proposed development (CIWMB, 2004). Solid waste generation includes all materials discarded, whether or not they are later recycled or disposed of in a landfill. The estimated solid waste generation from operation of the various uses in the proposed

development is approximately 37,000 tons/year. This amount is approximately 4% of the estimated 880,000 tons of solid waste received annually by the Mid-Connecticut Project of CRRA. Some of the solid waste generators expected as part of the development may be relocating from other areas within the region, thus the net increase in processing by the Mid-Connecticut Project will actually be less than 4%.

The State of Connecticut requires all businesses, including restaurants, to recycle the following items in accordance with Section 22a-208v and Section 22a-256a of the Connecticut General Statutes and Section 22a-241b of the Regulations of the Connecticut State Agencies:

- High grade white office paper,
- Unwaxed corrugated cardboard,
- Newspaper,
- Glass and metal food and beverage containers,
- Leaves (must be composted),
- Waste oil,
- Lead acid storage batteries,
- Scrap metal, and
- NiCd rechargeable batteries.

Grass is banned from disposal at landfills and resource recovery facilities (incinerators). Grass clippings should be left on the lawn, or if necessary, composted. Items required by local ordinance must also be recycled (DEP, 2003). The listed items above are also required to be recycled by all schools in Connecticut (DEP, 2003).

According to Section 22-220a (f) of the CGS, a collector or hauler shall be liable for a civil penalty of not more than \$2,500 for each violation and not more than \$10,000 for a subsequent violation if the collector knowingly mixes other solid waste with items designated for recycling pursuant to 22a-241b of the RCSA or pursuant to municipal ordinance. In addition, collectors are required to notify the municipal recycling contact about any customer believed to be discarding designated recyclables with solid waste (Section 22a-220c (a)) (DEP, 2001).

Waste containers will be placed at convenient intervals around buildings in the proposed development to encourage proper disposal of wastes by employees and patrons. On site, closed containers will store the solid waste, until it is hauled away by a licensed solid waste contractor. The contractor will take the solid waste off-site to a DEP approved disposal area. It is likely that the waste will be taken to a resource recovery plant and used to generate energy.

Solid waste collection containers will be placed at convenient intervals in the proposed Stadium parking areas. After Stadium events, trash left on the ground in the parking areas will be hand picked and containers will be emptied into the primary closed waste storage containers that are emptied periodically by a licensed solid waste contractor. Any complaints about litter or trash after Stadium events will be responded to timely and appropriately.

#### **3.1.7.4 Cumulative Impacts**

Solid waste will be generated in the form of construction waste associated with the transportation infrastructure improvements, as well as site development, and operational solid waste associated with the daily activities of the developed site. It is estimated that the solid waste generation from operation of the various uses in the proposed development will be approximately 37,000

tons/year. Operational solid waste will far exceed any waste generated from construction of the various transportation improvements and site development.

#### **3.1.7.5      Mitigation**

Prior to construction of the transportation improvements, the potential of recycling construction wastes will be assessed to determine its economic feasibility. A successful construction recycling program includes the following:

- Identification of recyclable materials that will be generated during construction,
- Assessment of the cost/savings of recycling,
- Development of a waste management plan, which is included in the contract documents, and
- Implementation of the waste management plan.

Prior to construction of the transportation improvements, a Construction Waste Reduction and Recycling plan will be created, in coordination with the DEP. This plan will take the above-listed components into consideration as well as assigning responsibility for appropriate waste handling.

### **3.1.8 Aesthetics/Viewsheds**

#### **3.1.8.1 Existing Conditions**

The Town of East Hartford is primarily residential, with some industrial, commercial, and rural areas. The greatest percentage of the Town's land use is comprised of single-family residences on lots of less than one acre, imparting an overall suburban character to the Town. Residential lots are typically clustered in subdivisions containing single-family and/or two family homes. In addition, apartment complexes and publicly assisted housing projects within East Hartford provide residential living alternatives. As described in the East Hartford Plan of Conservation and Development (2003), "'Old East Hartford' encompasses the area around Main Street, the Central Business District and the industrial corridors along the rail lines on Park and Tolland Avenues including the northeast spur towards Burnham Street. Glimpses of 'Rural East Hartford' include North Main Street and King Street as well as Hills Street, headed towards Manchester. 'Suburban East Hartford' includes the post war bungalows and single-family homes located to the southeast of the Central Business District. This area is interspersed with neighborhood schools and playgrounds; shopping plazas along Silver Lane, south end of Main Street, north end of Ellington Road, and east end of Burnside Avenue; as well as Prestige Industrial Park".

Rentschler Field is an abandoned airfield located adjacent to the major industrial complex, Pratt & Whitney, to the west. Rentschler Field is bordered to the north by Silver Lane and to the south by Brewer Street. The Rentschler Field Stadium is located in the northeast corner of the airfield and is a prominent feature along Silver Lane (Photograph 3.1.8-1). The interior of the site, which, for the most part, is not visible from the surrounding street network, consists of abandoned landing strips and taxiways amidst grassland and shrubland patches. The area on the east side of the airfield includes areas of immature and mature woodland, intermixed with some developed areas formerly used as industrial storage buildings or abandoned features of the airfield area. The undeveloped portion of the airfield area contains grassland with scattered, small shrubs and young trees, generally less than 3 to 4 feet in height (Photograph 3.1.8-2).

The Stadium was designed to blend with the early industrial buildings created by architect Albert Kahn at the Pratt & Whitney campus. The playing fields and lower seating bowl were situated approximately 26 feet below ground in order to reduce the bulk of the building. Grass parking areas and other vegetated areas create a surrounding park-like environment. The park-like landscape transitions into the wetland/woodland areas to the north and east of the site, thus integrating the site as much as possible into the fabric of the surrounding neighborhood, while maintaining vegetative buffers to the adjacent properties. The Stadium is only visible from Silver Lane; and was placed as far away from Silver Lane as possible to reduce aesthetic intrusion to the area. The Stadium is barely visible from other streets in the vicinity of Rentschler Field (e.g., Brewer Street, Main Street).

A mix of residential and commercial/industrial uses is present along Silver Lane. The attractiveness of residential neighborhoods in the area is limited by visual conflicts with the commercial/industrial uses. Photographs 3.1.8-3 and 3.1.8-4 present the residential and commercial character of Silver Lane, respectively. In the area of Roberts Street and the entrance to UTC, the overall aesthetic view blends with the general visual character of Silver Lane, as illustrated in Photograph 3.1.8-5.



Photograph 3.1.8-1. Rentschler Field Stadium



Photograph 3.1.8-2. Grassland Bird Habitat 2005



Photograph 3.1.8-3. Silver Lane at Gold Street



Photograph 3.1.8-4. Silver Lane Commercial Area



Photograph 3.1.8-5. Silver Lane at Roberts Street

The area surrounding the intersection of Main, Brewer and High Streets is commercial in nature, with small businesses such as fast food restaurants, gas stations, and convenience stores (Photographs 3.1.8-6 and 3.1.8-7). East of Main Street, Brewer Street is more residential in nature, with small individual lots set in compact neighborhoods and post-World War II single-family detached homes, such as the Roxbury Road neighborhood (Photograph 3.1.8-8).

A significant buffer of mature vegetation borders the UTC property along Brewer Street and the eastern edge of the property. This buffer obscures the view of the interior of the property from residences along Brewer Street and from the rear of the high school, as shown in Photographs 3.1.8-9 and 3.1.8-10. However, the chain link fencing around the property, some of which has barbed wire and appears not to have been maintained for some time, detracts from the aesthetic view of the area.



Photograph 3.1.8-6. Main Street North of Brewer Street



Photograph 3.1.8-7. High Street and Brewer Street



Photograph 3.1.8-8. Roxbury Road Neighborhood



Photograph 3.1.8-9. Brewer Street facing UTC Property



Photograph 3.1.8-10. Behind East Hartford High School facing west

### **3.1.8.2      Transportation Impacts**

The new grade-separated intersection at Roberts Street and Silver Lane will affect the viewshed of some residents and businesses along Silver Lane from approximately Mercer Avenue to Clement Road. The new view to the intersection would be of an approximately 25 feet high bridge over Silver Lane. This aesthetic impact will be addressed through the design process, which may include architectural treatment of the bridge fascia.

The proposed improvements at the Route 2/Brewer/Main/High Street area will not negatively affect the aesthetics of the area. This area is currently industrial/commercial in nature; therefore the modifications to the roadway system in this area should not negatively affect aesthetics or viewsheds. The same can be expected of the I-84 ramp improvements, the Main Street/Willow Street intersection improvements, the improvements at the Silver Lane/Forbes Street intersection, the Silver Lane widening, the Main Street/Silver Lane intersection improvements, and the improvements at Simmons Road.

The access to EHGENS will be located adjacent to the existing EHHS drive and parking lots; therefore, there will not be significant changes to the aesthetics/viewsheds in the area.

### **3.1.8.3      Site Development Impacts**

The Rentschler Field development will comply with the guidelines for the Design Development District, as outlined in the East Hartford Zoning Regulations. In any Design Development District in which the parcel is occupied by a building or other use and which abuts a Residence Zone, there shall be a 50-foot buffer strip which may consist of shrubs, hedges, planted berms or trees. The vegetation must be of sufficient mass to provide, within 12 months of final completion, an appropriate screen between the parcel and the adjacent Residential Zone. Site development will maintain the existing perimeter vegetation to the extent possible. The chain-link fencing around the site was installed as a security and safety structure to isolate the prior active airfield activities from the adjacent residential areas. The fencing should be removed as the site is developed unless required for site security. Any replacement perimeter treatment will be designed to coordinate with the building types (Office/High Tech, Destination Retail/Entertainment/Amenity, Cultural/Educational, Residential, Hotel, Medical/Fitness/Sports and Manufacturing), the building and parking design, size, and location, as well as to meet Town of East Hartford requirements. The developer will establish criteria for individual tenants to adhere to regarding perimeter treatment, parking lot design, landscaping, and other exterior amenities.

The underlying zones in the Design Development District applying to Rentschler Field are I-2 Industrial and I-3 Industrial. The maximum building heights allowed in these underlying zones are listed in the following table. According to the Master Plan Zone Change Application (TMG, 2005), buildings may be up to 150 ft in height within the "North Gateway Node", a 55 acre region surrounding the site entrance at Roberts Street and Silver Lane, and up to 300 feet in height within the "Willow Gateway Node", a 127-acre region surrounding the Willow Street and Airport Road intersection, and within the "South Gateway Node", a 69-acre region surrounding the proposed East Hartford Boulevard South site entrance.

The development will likely consist of a variety of building sizes and configurations, some of which may be as tall as 300 foot high-rises. In certain areas of the development defined by the Master Plan, a buffer strip of one foot for every three feet over 100 feet in height will be required

for any building taller than 100 feet. The taller buildings will likely be visible from surrounding neighborhoods, despite the required buffer strips.

**Table 3.1.8-1. Design Development District Maximum Building Heights in Rentschler Field.**

| <b>Underlying Zone</b> | <b>Maximum Allowable Building Height (feet)</b> |
|------------------------|---|
| I-2                    | 50  |
| I-3                    | 100   |

Source: East Hartford Zoning Regulations

State of the art office and technology buildings, as well as condominiums, restaurants, theaters, recreational facilities, hotels and shopping areas will be incorporated into a campus - like environment with landscaped open space areas for a contemporary mixed-use development.

#### **3.1.8.4 Cumulative Impacts**

The majority of the transportation improvements will not result in significant changes to the aesthetics/viewsheds of the area. However, the Roberts Street/Silver Lane grade-separated interchange will alter the aesthetics of the area. The existing at-grade intersection will be converted to a bridge of Roberts Street over Silver Lane, imparting a more urban character to the landscape. The urban character will extend into the development of Rentschler Field, where a mix of commercial and residential buildings will replace the existing flat, open space. In general, the development in the area will provide opportunities to improve the streetscape aesthetics along Silver Lane and Brewer Street.

#### **3.1.8.5 Mitigation**

The aesthetic impact of the new Roberts Street/Silver Lane grade-separated interchange will be addressed through the design process, which may include architectural treatment of the bridge fascia.

In any Design Development District in which the parcel is occupied by a building or other use and which abuts a Residence Zone, there shall be a 50-foot buffer strip which may consist of shrubs, hedges, planted berms or trees. The vegetation must be of sufficient mass to provide, within 12 months of final completion, an appropriate screen between the parcel and the adjacent Residential Zone. In certain areas of the development defined by the Master Plan which do not abut a Residence Zone, a buffer strip of one foot for every three feet over 100 feet in height will be required for any building taller than 100 feet.

### **3.1.9 Cultural Resources**

#### **3.1.9.1 Existing Conditions**

Phase 1a and 1b archaeological surveys were conducted in an effort to assess the potential for the presence of significant buried prehistoric and historic period archaeological remains and/or above ground historic properties within the site development area as well as the areas slated for transportation improvements. The Phase 1a survey was conducted by Archaeological and Historical Services, Inc. (AHS) in two parts: (1) a standard Phase 1a Reconnaissance Survey, or archaeological assessment survey, in September 2005, and (2) an intensified Phase 1a investigation in November 2005 to January 2006. The Phase 1b Cultural Resources Reconnaissance Survey was conducted by Heritage Consultants, LLC in May of 2006. Copies of these reports are included in Appendices J and K, respectively.

##### ***Phase 1a Reconnaissance Survey (AHS, September 2005)***

The initial survey consisted of background research covering the 650-acre property owned by UTC, 32 acres of which may be impacted by transportation improvements, walkover inspections of the open, wooded and roadside portions of the project area, and a soil probe survey of the former airfield area. The survey was conducted in accordance with the SHPO *Environmental Review Primer for Connecticut's Archaeological Resources*. Background research included a review of local histories and historical maps, cultural resource management reports, aerial photographs, geological and ecological data layers included in the DEP Geographic Information System (GIS) data package, and SHPO's archaeological site files. Thirty-seven (37) soil probes were conducted to assess the intactness of soils which indicate their potential to contain undisturbed subsurface archaeological remains.

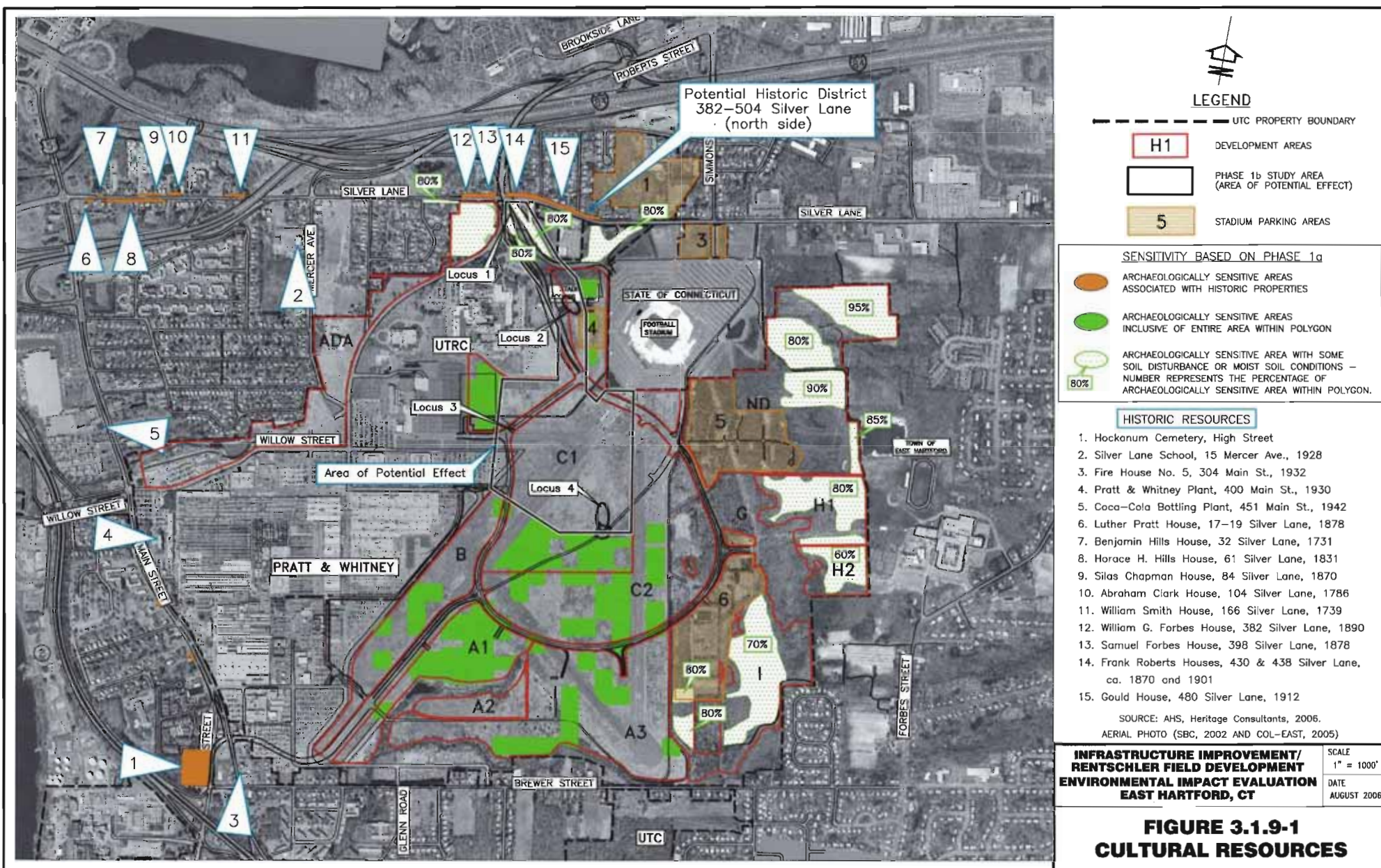
Background research indicated the potential for archaeological remains associated with extensive 1780 and 1781 French army encampments to be present along Silver Lane. In addition, remains of Podunk Indian villages and camps and a wigwam have been documented as being within the site development area. A 19<sup>th</sup> century map shows an oil mill on Pewterpot Brook, likely within the site development area.

The walkover inspection and soil probe survey identified 285 acres of the 650-acre site development area as having moderate to high potential for containing significant archaeological resources. In addition, 1,600 linear meters (5,250 linear feet) within transportation improvement areas were estimated to be archaeologically sensitive. Development area A2 was determined to not require any additional archaeological survey due to the presence of disturbance and soil contamination (Figure 3.1.9-1).

##### ***Intensified Phase 1a Investigation (AHS, November 2005 – January 2006)***

This investigation was conducted to refine the areas (285 acres) of archaeological sensitivity identified in the initial Phase 1a survey so that the subsequent Phase 1b survey effort would be more focused and cost effective. This survey included the following areas of site development (Figure 3.1.9-1), in descending order of importance, with the first four areas taking priority:

1. Development area A1,
2. Development area C1 (Cabelas parcel),
3. Development area H2 (EHGEMS parcel),
4. The access roads to the above parcels (site development ring road and East Hartford Boulevards North and South),



5. Additional development areas (ADA, A3, B, C2, D, E, F, G, H1, J, ND), and
6. Transportation spot improvements outside of the site development area.

Table 3.1.9-1 presents the results of the intensified Phase 1a investigation, with the acreage of archaeologically sensitive areas identified for each site development area. The investigation refined the archaeologically sensitive areas requiring Phase 1b investigation to 160± acres.

**Table 3.1.9-1. Archaeologically Sensitive Acreage of the Site Development Area.**

| Development Area | Total Acreage | Potentially Contaminated Acreage Exclusive of Wetlands | Wetland Acreage | Estimated Disturbed Acreage Exclusive of Contaminated and Wetland Areas | Archaeologically Sensitive Acreage | Notes   |
|------------------|---------------|--|-----------------|---|------------------------------------|---|
| A1               | 24.70         | 0.12   | 0.00            | 9.78  | 14.80                              |   |
| A2               | 7.76          | 3.16   | 1.49            | 3.11  | 0.00                               |   |
| A3               | 64.16         | 11.51  | 1.65            | 40.00   | 11.00                              |   |
| B                | 30.09         | 0.00   | 0.00            | 24.59   | 5.50                               |   |
| C1 (Cabelas)     | 62.11         | 0.00   | 0.00            | 31.41   | 30.70                              | Northern portion lies within area documented in 1930's as Podunk Indian Village |
| C2               | 62.73         | 5.21   | 0.39            | 42.73   | 14.40                              |   |
| D                | 11.20         | 0.00   | 0.00            | 3.20  | 8.00                               | Lies within area documented in 1930's as Podunk Indian Village                  |
| E                | 15.20         | 0.00   | 0.21            | 11.39   | 3.60                               | Contains location of Revolutionary War –era Wigwam site documented in 1879      |
| F                | 6.82          | 0.00   | 0.00            | 6.82  | 0.00                               |   |
| G                | 1.20          | 0.65   | 0.00            | 0.55  | 0.00                               |   |
| H1               | 20.20         | 0.43   | 0.00            | 7.47  | 12.30                              |   |
| H2 (EHGEMS)      | 9.70          | 0.00   | 0.00            | 4.00  | 5.70                               |   |
| I                | 59.17         | 18.75  | 9.94            | 13.38   | 17.10                              |   |
| J                | 7.16          | 0.00   | 0.00            | 0.96  | 6.20                               |   |
| ND               | 80.99         | 5.60   | 23.86           | 26.13   | 25.40                              |   |
| ADA              | 35.92         | 0.00   | 3.15            | 32.77   | 0.00                               |   |
| Interior Roads   | 43.40         | 4.67   | 0.80            | 32.89   | 5.04                               |   |
| <b>Total</b>     | <b>542.51</b> | <b>50.10</b>   | <b>41.49</b>    | <b>291.18</b>   | <b>159.74</b>                      |   |

Source: AHS, 2006

The investigation of areas of transportation improvements found that no additional archaeological investigation would be warranted for the areas of proposed intersection improvements at Willow

Street and Main Street, and between the proposed East Hartford Boulevard South and Brewer Street. The area of the proposed new right turn lane on the south side of Silver Lane west of Airport Road was determined to be archaeologically sensitive for a total linear distance of about 800 feet extending west from the edge of Airport Road. Archaeologically sensitive areas associated with historic properties are located along Silver Lane east and west of Roberts Street and between Main Street and the Route 15 ramps, and along Main Street between Willow Street and Brewer Street, as shown on Figure 3.1.9-1. The Hockanum Cemetery on High Street is also an archaeologically sensitive area.

### ***Historic and Architectural Resources***

Both sides of Silver Lane between Main Street and Forbes Street, Main Street from Brewer Street to Silver Lane, and the north side of Brewer Street were inspected for the presence of above-ground historic and architectural resources as part of the Phase 1a survey. The Selden Brewer House at 137 High Street is listed on the National Register of Historic Places. Two properties, the Abraham Clark House at 104 Silver Lane and the first Frank Roberts House at 430 Silver Lane, are listed on the State Register of Historic Places. Other properties deemed eligible for listing on the National or State Registers of Historic Places are summarized in Table 3.1.9-2 and Figure 3.1.9-1.

**Table 3.1.9-2. Properties Eligible for Listing on the National or State Registers of Historic Places.**

| <b>Property/Resource</b>                 | <b>Location</b>   | <b>Date/Period</b>                            |
|--|---|---|
| Hockanum Cemetery                        | West side of High Street opposite Brewer Street               | 18 <sup>th</sup> and 19 <sup>th</sup> century |
| Silver Lane School                       | 15 Mercer Avenue  | 1928  |
| Pratt & Whitney Plant                    | 400 Main Street   | 1930  |
| Coca Cola Bottling Plant (south portion) | 451 Main Street   | 1942  |
| Fire House No. 5                         | 304 Main Street   | 1932  |
| Luther Pratt House                       | 17-19 Silver Lane   | 1878  |
| Benjamin Hills House                     | 32 Silver Lane  | 1731  |
| Horace H. Hills House                    | 61 Silver Lane  | 1831  |
| Silas Chapman House                      | 84 Silver Lane  | 1870  |
| Abraham Clark House                      | 104 Silver Lane   | 1786  |
| William Smith House                      | 166 Silver Lane   | 1730  |
| William G. Forbes House                  | 382 Silver Lane   | 1896  |
| Samuel Forbes House                      | 398 Silver Lane   | 1878  |
| Frank Roberts Houses                     | 430 and 438 Silver Lane                                       | 1870 and 1901                                 |
| Gould House                              | 480 Silver Lane   | 1912  |
| Potential Historic District              | North side of Silver Lane between 382 and 502-504 Silver Lane |   |

Source: AHS, 2006

Other buildings of historical interest which are not recommended as individually eligible for the National or State Registers of Historic Places include South Grammar School (Brewer, High and Main Streets), Eighteenth-century house (353 Main Street), Jonathan Wells, Jr. House (381 Main Street), Commercial block (417-419 Main Street), Commercial block (499-501 Main Street), Craftsman-style house (531 Main Street), Algernon Pratt House (39-41 Silver Lane), Italianate-style house (74-76 Silver Lane), John Abby House (93-95 Silver Lane), William Smith Tavern (158 Silver Lane), House, ca.1800 (305-307 Silver Lane) and Russell Smith House (502-504

Silver Lane) (AHS, 2006). These houses are not recommended due to issues of integrity, such as alteration with modern features or lack of architectural distinctiveness.

The 1960's control tower located on the airfield is not eligible for the National or State Registers of Historic Places.

The *Phase 1a Archaeological Reconnaissance Survey, Rentschler Field Project/Compilation Plan* (AHS, 2006) is included as Appendix J of this EIE.

***Phase 1b Cultural Resources Reconnaissance Survey (Heritage Consultants, LLC; June 2006)***

The Phase 1b survey conducted by Heritage Consultants, LLC in May of 2006 consisted of pedestrian survey, systematic subsurface testing, mapping and photo-documentation of the archaeologically sensitive areas within the "Area of Potential Effect" associated with the proposed site of Cabelas and some of the infrastructure improvement areas (Figure 3.1.9-1). The "Area of Potential Effect" included development areas C1, D and E, identified during the Phase 1a survey (see Table 3.1.9-1), as well as an area outside the development areas located at the intersection of Airport Road and Silver Lane. All work was performed in accordance with the National Historic Preservation Act of 1966, as amended; the National Environmental Policy Act of 1969, as amended; the Connecticut Environmental Policy Act; and the *Environmental Review Primer for Connecticut's Archaeological Resources* promulgated by the Connecticut Historic Commission, State Historic Preservation Office. The Phase 1b survey also included background research including analysis of available historic maps, aerial imagery, USGS topographic quadrangles, previously completed archaeological investigations, and review of archaeological data maintained by the Connecticut State Historic Preservation Office and digital records archived by Heritage Consultants, LLC.

A total of 173 shovel tests were excavated throughout the "Area of Potential Effect" at approximately 100 foot intervals, except for Area E, which was surveyed at 50 foot intervals because it was identified as the possible location of a Native American wigwam site in the Phase 1a study. The Phase 1b survey confirmed that the proposed project area has been severely impacted as a result of historic period use and development. Impacts include the excavation of ditches to provide drainage, long-term plowing for tobacco cultivation, cutting, filling and grading associated with the construction of Rentschler airfield, installation of electrical facilities and drainage culverts associated with the airfield, demolition of houses along Silver Lane, construction and demolition of a World War II era military facility, and recent soil deposition associated with construction of the Rentschler Stadium. The Phase 1b survey identified four non-site cultural resources loci as summarized in the following table and in Figure 3.1.9-1. The four loci do not possess research potential, as determined by the Phase 1b survey. Therefore, these cultural resources are not significant as defined by the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]) and no additional testing and/or recordation of Locus 1 through 4 or the proposed Development Areas is recommended.

The creation and use of Rentschler Field as an airfield is a significant cultural resource associated with aviation history. As summarized in the *Phase 1b Cultural Resources Reconnaissance Survey of the Proposed Cabelas Development Project Within Rentschler Field in East Hartford, Connecticut* (included in Appendix K), Rentschler Field was named after Frederick Brant Rentschler, who founded both the aircraft division of Pratt & Whitney and its current parent company United Technologies. The nation's first airliners were powered by aircraft engines tested and perfected at Rentschler Field, and approximately 50 percent of the airplane engines used by the United States military during World War II were built by Pratt & Whitney and

**Table 3.1.9-3. Phase 1b Identified Non-Site Cultural Resources Loci.**

| <b>Locus</b> | <b>Location</b>                    | <b>Reason for Identification</b>   | <b>Assessment</b>   |
|--------------|------------------------------------|--|---|
| 1            | Area Outside the Development Areas | Recovery of a single whiteware sherd (i.e., a piece of broken pottery) artifact.   | The Area Outside Development Areas has been subjected to significant impacts as a result of building demolition and subsequent landscape restructuring. Intact cultural deposits were not identified within the confines of Locus 1, thus the Locus 1 area is not significant (applying the National Register of Historic Places criteria; 36 CFR 60.4[a-d]), and no additional testing is recommended.   |
| 2            | Development Area E                 | Recovery of two plain whiteware sherds from two separate shovel tests.   | The cultural material originated from fill deposits. Development area E has been subjected to significant impacts as a result of modern earth moving and fill deposition. Locus 2 was assessed as not significant (applying the National Register of Historic Places criteria; 36 CFR 60.4[a-d]). Because no evidence of intact cultural deposits was identified, no additional testing of Locus 2 or the Area of Potential Effect associated with Development Area E is recommended.   |
| 3            | Development Area D                 | Recovery of a single undecorated whiteware sherd.  | The artifact was recovered from a fill deposit. The area has been subjected to severe impacts in the past as a result of building and road construction, installation of the nearby taxiway, diversion of Willow Brook, and substantial filling. No deposits containing intact cultural resources were identified and Locus 3 was assessed as not significant (applying the National Register of Historic Places criteria; 36 CFR 60.4[a-d]) and no additional testing of Locus 3 or Development Area D is recommended.   |
| 4            | Development Area C1                | Recovery of 15 historic period artifacts from 5 survey shovel tests and 2 delineation shovel tests. Cultural material consisted of plain whiteware sherds, brick fragments, machine made bottle glass rim shards, and nails, dating from the turn of the twentieth century. A small pocket of iron slag and a group of mortared bricks were also identified. | The recovered cultural material was collected from a disturbed fill layer of modern origin, as well as a layer of mottled yellowish brown sand likely representing modified soils related to airfield construction. Because the stratigraphic integrity of the resource appears to have been impacted and because numerous and better examples of this type of resource (agricultural use) exist within the region, the Locus 4 area was assessed as not significant (applying the National Register of Historic Places criteria; 36 CFR 60.4[a-d]) and no additional testing of Locus 4 or Development Area C1 is recommended. |

its licensees. Frederick Rentschler received numerous awards, appeared on the cover of Time Magazine, and was inducted into the United States Air Force Aviation Hall of Fame. Rentschler Field, therefore, retains the qualities of significance as defined by criteria A and B of the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]).

### **3.1.9.2      Transportation Impacts**

#### ***Roberts Street/Silver Lane Intersection***

Historic properties are located both east and west of Roberts Street, north of Silver Lane (identified as numbers 12, 13, 14 and 15 on Figures 3.1.9-1 and 1.2.1-2). Partial takings of land included in these properties will likely be required for the construction of the Roberts Street grade-separation and the widening of Silver Lane. Impact areas are summarized in Section 3.3.2.

#### ***Route 2/ Brewer Street/Main Street/High Street***

Hockanum Cemetery (1) and Fire House No. 5 (3) are the nearest historic properties (see Figures 3.1.9-1 and 1.2.1-8); however, neither will be impacted. Improvements will occur along Hockanum Cemetery but will remain within the right of way. No improvements will occur near Fire House No. 5. The Selden Brewer House at 137 High Street, which is listed on the National Register of Historic Places, is located south of the Route 2/High Street intersection and is outside of the impact area for these improvements.

#### ***I-84 Ramps***

There are no archaeologically sensitive areas or historic resources within the areas slated for improvements to the I-84 ramps, thus no impacts to cultural resources are expected.

#### ***Main Street/Willow Street Intersection***

There are no archaeologically sensitive areas or historic resources within or near the impact area of the Main Street/Willow Street Intersection, thus no impacts to cultural resources are expected.

#### ***Silver Lane***

Besides those properties near the Roberts Street intersection, discussed above, one additional property may be impacted by widening of Silver Lane. It is located near the Route 15 crossing and is identified as # 11 on Figures 3.1.9-1 and 1.2.1-5. The impact to this property is likely to be minimal.

#### ***Access to EHGEMS***

There are no archaeologically sensitive areas or historic resources within or near the impact area of the access drive to EHGEMS, thus no impacts to cultural resources are expected.

### **3.1.9.3      Site Development Impacts**

#### ***Rentschler Field Master Plan Development***

As described in the *Phase 1b Cultural Resources Reconnaissance Survey of the Proposed Cabelas Development Project Within Rentschler Field in East Hartford, Connecticut* (Appendix K), Rentschler Field was named after Frederick Brant Rentschler, who founded both the aircraft division of Pratt & Whitney and its current parent company United Technologies. The nation's first airliners were powered by aircraft engines tested and perfected at Rentschler Field, and approximately 50 percent of the airplane engines used by the United States military during World

War II were built by Pratt & Whitney and its licensees. Frederick Rentschler received numerous awards, appeared on the cover of Time Magazine, and was inducted into the United States Air Force Aviation Hall of Fame. Rentschler Field, therefore, retains the qualities of significance as defined by criteria A and B of the National Register of Historic Places criteria for evaluation (36 CFR 60.4 [a-d]). The development will result in the demolition of the Rentschler airfield, which is a significant cultural resource associated with aviation history. Appropriate mitigation is discussed below.

#### ***Master Plan Internal Roadway***

As shown on Figure 3.1.9-1, portions of the proposed loop road and East Hartford Boulevard South pass through areas that were categorized as archaeologically sensitive based on the Phase 1a Reconnaissance Survey. Further investigation in the form of a Phase 1b Cultural Resources Reconnaissance Survey will be required to determine if construction of the Master Plan Internal Roadway will impact cultural resources.

#### ***Stadium Parking Plan***

Most of the proposed Stadium parking areas lie outside of potential archaeologically sensitive areas. The only exception is in the southwest corner of Area 6 (Figure 3.1.9-1) where there is a small area that contains approximately 80% undisturbed soil that has the potential to contain archaeological artifacts.

#### ***EHGEMS Building and Grounds***

The proposed EHGEMS will be located in an area that was classified as 60% archaeologically sensitive by the Phase 1a survey (shown as area H2 on Figure 3.1.9-1). A Phase 1b survey will be required to establish the extent of impacts to cultural resources by construction of the EHGEMS.

#### **3.1.9.4 Cumulative Impacts**

The transportation improvements will involve partial takings of up to six historic properties. Development of Rentschler Field will involve construction within archaeologically sensitive areas, as defined by Phase 1a Reconnaissance Survey, with the potential to contain artifacts. In addition, the airfield, a significant cultural resource associated with aviation history, will be demolished.

#### **3.1.9.5 Mitigation**

##### ***Roberts Street/Silver Lane Intersection; Silver Lane***

Archaeologically sensitive areas associated with historic properties likely to be impacted during construction of the Roberts Street/Silver Lane grade separated intersection and widening of Silver Lane will require testing in the form of a Phase 1b survey prior to construction.

##### ***Route 2/ Brewer Street/Main Street/High Street; I-84 Ramps; Main Street/Willow Street Intersection; Access to EHGEMS***

No impacts are anticipated, thus mitigation will not be required.

##### ***Rentschler Field Master Plan Development***

To mitigate the demolition of the airfield, which is a significant cultural resource associated with aviation history, it is recommended by the SHPO (see correspondence in Appendix A) that methods to commemorate the contributions that Pratt & Whitney and Frederick Rentschler have

made to the Town of East Hartford, the State of Connecticut, and the Nation, in the field of aviation be included with site development. Appropriate mitigation strategies include, but are not limited to, the production of a public history booklet about Mr. Rentschler and the growth of the Aviation Industry, as well as the creation of an informative kiosk within Cabelas (or other public area) about the past use of the project area (Heritage Consultants, LLC; June 2006). The Master Plan includes a proposed monument honoring Frederick Rentschler to be located within the development. The Rentschler Field Stadium has an existing permanent photographic exhibit documenting the history of Rentschler Field.

#### ***Master Plan Internal Roadway***

The Phase 1a Reconnaissance Survey determined that archaeologically sensitive areas overlap with portions of the proposed loop road and East Hartford Boulevard South, as shown on Figure 3.1.9-1. A Phase 1b Cultural Resources Reconnaissance Survey will be conducted in coordination with SHPO to determine if construction of the Master Plan Internal Roadway will impact cultural resources.

#### ***Stadium Parking Plan***

A Phase 1b investigation will be conducted for the southwest corner of parking area 6 before construction of the parking lot.

#### ***EHGEMS Building and Grounds***

A Phase 1b survey will be conducted in coordination with SHPO to establish if cultural resources will be impacted by construction of the EHGEMS, and the extent of those impacts, if any. The proposed EHGEMS will be located in an area that was classified as 60% archaeologically sensitive by the Phase 1a survey (shown as area H2 on Figure 3.1.9-1).